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AGRICULTURE

No. 201

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CHINA REPORT

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I. GENERAL INFORMATION

RURAL PROBLEMS IN CROP PATTERNS, LAND USE, BIRTH CONTROL DISCUSSED

Beijing ZHONGGUO NONGMIN BAO in Chinese 11 Feb 82 p 1

[Article by Editor: "Three Major Rural Problems Currently Meriting Attention"]

[Text] This newspaper has recently received quite a few letters from readers reporting three conspicuous problems in rural areas currently requiring solution. One is local stress solely on economic diversification with consequent reduction in the area sown to grain. Second is the wilful destruction of land and the encroachment on cultivated land that continues quite serious. Third is very great difficulties in planned birth work, numerous commune members planning to have many children. Today we have selected for publication incoming letters on these three subjects, which we hope will arouse the serious concern of leaders at all levels in rural villages.

Attention to grain production and stabilization of the grainfield area are major issues relating to guaranteeing state plans, building of the "four modernizations," and the livelihood of the people. They positively cannot be treated lightly. Reducing the area sown to grain in order to develop economic diversification not only is not in accordance with party programs, but is also not in accord with the longterm interests of the peasants. All communes and brigades must indoctrinate the masses in the importance of the national interest and, in the formulation of production plans and the production process, they should comprehensively implement a program of "positively no relaxation in grain production with active development of economic diversification."

Conservation of land, equitable use of land, and good care and good use of cultivated land are also major issues touching on the national economy and the people's livelihood. Premier Zhao Ziyang pointed out in this "Report on the Work of the Government" that, "Treasuring every cun of soil should be our national policy." Since it is "national policy," naturally it should be resolutely put into effect. The illegal destruction of cultivated fields and the wilfull use of cultivated fields to build houses must be resolutely halted.

Planned births is a task that must be regularly given attention, constantly given attention, and given attention over a long period of time. The practice in rural villages of systems of responsibility has occassioned attacks on planned childbirth. Some peasants say, "We farm our own land; we eat our own grain; and when we have a lot of children, we raise them ourselves. This has occassioned new difficulties for planned childbearing. However, so long as the attitude is firm, and work done meticulously, results will certainly follow. Many places propose "attention to both kinds of production at once, the handing down of two kinds of quotas at once, and contracting at the same time of both kinds of agreements (production, and births), and they ask that cadres and members of the party and youth league "take the lead in both." In consequence, production has gone up, and the birthrate has gone down. These experiences merit consideration everywhere.

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MEASURES TO FIGHT DROUGHT IN SIX NORTH PROVINCES OUTLINED

Beijing ZHONGGUO NONGMIN BAO in Chinese 11 Feb 82 p 2

[Article by State Council Drought Combat Leadership Team Office: "Major Winter Wheat Growing Areas in North China Actively Implement Double Protection Measures in Fight Against Drought"]

[Text] North China's principal winter wheat growing areas, the six provinces and municipalities of Beijing, Tianjin, Hebei, Shandong, Shaanxi, and Henan have actively strengthened leadership of doublt protections (protection of wheat and protection of spring sowing) in the combat against drought, and have rapidly instituted various measures in a resolute effort to win a bumper grain harvest this summer.

As a result of consecutive years of drought in these six provinces, and particularly because of the scant amount of precipitation since the sowing of wheat in the fall of 1981, soil moisture conditions are poor. Wheat growth in these places prior to the onset of winter has generally been poorer than in former years. The approximately 60 million-odd mu of wheatlands afflicted by the drought amount to about 40 percent of the sown area. Currently the drought continues serious, and sources of irrigation water are seriously inadequate. In order to assure spring irrigation for spring sowing, before the lunar new year, the six provinces and municipalities convened appropriate meetings to implement measures to protect the wheat and protect spring sowing in combat against drought, to actively arouse the masses, and to use every means possible to find water sources to expand the irrigated area. Since November 1981, Shandong Province has allocated 15 million yuan from public funds to provide for 40 projects urgently needed to fight the drought. Eighteen of these projects have already been built and it is anticipated that all of them will be completed before the time for spring irrigation arrives. They will enlarge the irrigated area by 3.6 million mu and improve irrigation on an area of 3.3 million mu, thereby expanding to more than 15 million mu the irrigated area served by diversion of the Huang He. Plans also call for the sinking or equipping with pumps of 30,000 wells, and the renovation of 70,000 old wells. Already 810,000 dug wells and hand pump wells have been sunk and plans call for the sinking of another 500,000 to raise water lying not very far below the surface. Total amount of ground water to be raised in the province is 4.4 billion cubic meters; 5.5 billion cubic meters are to be diverted from the Huang He; and 700 million cubic meters in reservoir storage are to be used to assure completion of spring sowing tasks. In order to enlarge the area irrigated in the spring, Beijing plans to sink wells, equip wells, renovate wells, flush out wells, and change pumps on wells to open ground water sources. In addition, Beijing will also actively institute cutbacks on water for industry, and use of urban waste water. To solve the serious shortage affecting more than 500,000 people in central Shanxi, Yixian Prefecture and Taiyuan municipality, the Water Conservancy Department and the Department of Finance of Shanxi Province have allocated 3.65 million yuan as special funds for the planned construction of 336 projects for raising and diverting water, for sinking 9,979 water retention wells, and for repairing 81 dry ponds to alleviate problems in getting water for people and animals.

The six provinces and municipalities have also established systems of responsibility for building and improving water conservancy, making it a major task for the fight against drought this spring. One-third of Shanxi Province's water conservancy projects have yet to set up systems of responsibility and for 36 percent of the pump wells in Hebei Province, systems of responsibility have not been perfected. Both provinces are preparing to act swiftly, concentrate forces, and establish systems before spring sowing, production team by production team, well by well, and station by station in order to make the most of benefits from existing water conservancy projects. In order to be able to water more land and do a better job of it, Shandong, Shanxi, Henan, and Tianjin have also called for the prevention of leaks in irrigation ditches, and have promoted the use of pipes (plastic pipes) to take the place of ditches, and spray irrigation. They have taken action to provide so much water per mu and collect fees on the basis of time water is used. They are striving to conserve use of water, to plan use of water, and to use water scientifically. All trades and industries in these areas actively support the struggle against drought to protect the wheat. The Henan Drought Combat Office and the Provincial Petroleum Company are studying allocation of 22,000 tons of diesel oil from inventories for use in watering the wheat to make it green up after winter. Shandong and Hebei Provinces have made satisfactory arrangements for use of petroleum and electricity to fight drought.

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MEANS OF TRANSLATING NEW AGRICULTURAL TECHNIQUES INTO PRODUCTIVITY EXPLORED

Tianjin KEXUEXUE [SCIENOLOGY] in Chinese No 5, 20 Oct 81 pp 35-36

[Article: "Functions of Suburban County Science Commissions in the Extension of Agricultural Techniques"]

[Text] One of the major duties of agricultural science and technology management units is to convert to social productivity as rapidly as possible agricultural science and technology (including technical innovations, inventions, and new experiences that have developed out of production and scientific and technical activities by the masses). In doing so, they make a contribution in hastening the building of socialism and to early realization of the four modernizations.

Because of the limitations of natural conditions on agricultural production and scientific experimentation, production and experimental cycles are long, one year or several years frequently being required to complete a single experiment. Particularly in the case of each new research achievement, advanced technique and experience in increasing yields created by the masses in the course of production, the great potentials for production can only be fully revealed under certain culturing conditions and levels of technical care. If technical levels of production for a certain period of time are departed from, the potential will be relatively impaired. Therefore, the problem of how to more quickly apply advanced scientific techniques to agricultural production must be a major responsibility of county level science and technology management units. This article discusses only how suburban counties discharge this important responsibility.

1. Widespread Understanding and Mastery of Technical Achievements and New Techniques With Selection of Major Ones For Use in Local Production

In the process of widespread collection and collation of domestic and foreign scientific and technical data, county level science and technology management units must focus on selection of those new achievements and new techniques that are able to serve local agricultural production, take the most promising ones in hand, and actively organize a series of jobs that include experimentation, demonstration, and extension, which include the following specifics.

1. Proper Selection and Tenacity. New achievements constantly appear in the development of modern science and technology, and how to select the techniques that are suited for extension is an extremely important matter. This bears on whether science and technology will truly serve agricultural production and promote development of agricultural production. In choosing the emphasis, county level science and technology management units must devote attention to the technology that has a critical effect on production and of major problems of production techniques awaiting solution, making these the emphasis. Introduction of technology of a general nature and the extension of experiences may be left to agricultural production and technical units. Once the techniques to be given emphasis have been set, county CCP committees should organize pertinent departments or units for their systematic study and digestion. In addition to the study of pertinent references and technical data, if possible, a few scientists and technicians should be sent out for on-the-ground study so that results will be somewhat better. In 1978, we focused on problems existing in suburban areas of Jilin in seedling propagation techniques, and decided to give emphasis to introduction from elsewhere of techniques for the hydroponic propagation of vegetable seedlings. After getting a foundation from the study of technical data, we organized four comrades familiar with vegetable seedling propagation techniques to go to suburban Changzhou and Shanghai, and to the Shandong Academy of Agricultural Sciences for specialized study. In 1979, these experiments succeeded in my district.

After getting a preliminary grounding in techniques, selection of a site for experiments and formulating an economically effective plan for the experiment is most important. No matter whether in a science and technology management unit or an experimental unit, it is necessary to designate someone responsible for this work.

2. Perserverance in a Combination of Organization of Experiments, Demonstration, and Extension. This is necessary to a good job in extending new techniques. Both agricultural production and experiments are directly subject to the limitations of natural conditions. Changes in natural conditions can directly affect continuation of agricultural experiments. Every result of scientific techniques, and every technique for increasing yields has a certain scope of adaptation to, and places certain demands on climatic conditions and farming conditions. When this scope is exceeded, no matter how good the techniques, anticipated results will be difficult to achieve. Even when other places are similar in natural conditions and farming conditions, a process of familiarization and mastery of a new technique is required. In the introduction of techniques, in experiments, demonstrations and extensions, it is most important that county level science and technology management units focus on experiments, proceeding gradually from a foundation of success in experiments to an expansion of the scope of experiments to carry out production demonstrations. Extension to large areas for production should be done by agricultural production and technical departments.

2. Organization of Forces to Surmount Difficulties With Production Techniques

County level science and technology management units should be concerned about things that concern production, and they should help with things production needs. Through investigation and study, and proceeding from the requirements of production, they should coordinate units concerned and organize forces for a technological attack on technical problems in current local production that have not been solved and that have a fairly wide effect. One example is the virus disease of chili peppers that has generally broken out in our region since 1972, that has caused a great amount of damage and has caused a tremendous decline in pepper yields per unit of area. In order to solve this problem, the district science commission, acting in coordination with the horticulture bureau, the vegetable institute, and farm science stations in some communes and brigades, jointly organized a technological attack on the problem. After more than four years time, they worked out a comprehensive prevention and control method, which has scored remarkable results. Later this was widely extended throughout the region by units for the extension of agricultural techniques. Experience has shown that the method of science and technology management units working in concert with units concerned to organize technological attacks on problems possesses great advantages in promoting the development of production.

3. Need for Close Coordination With Units Concerned For Positive Performance of Extension Work

1. Work requires a division of labor and a coordination of labor. The nature of the work of county level science and technology management units and units for the extension of agricultural techniques is different. In the launching of extension work for new achievements and new techniques is different. In the launching of extension work for new achievements and new techniques, county level scientific and technical management units are concerned principally with organization and coordination, and to giving attention to test sites for the major techniques to be introduced. The main duty of units for the extension of agricultural techniques is technical guidance and demonstration work. The nature of the work of the two units differs, but requires mutual coordination and cooperation. Some jobs require combined efforts while others require separate and independent work. County level scientific and technical management units must rely on the expert technicians in agricultural units and on the masses of commune members who are anxious to do scientific experiments. In order to insure the smooth progress of experiments and demonstrations, whenever possible scientific and technical management units should be given necessary help with funds, materials, equipment, and in the organization of forces from all quarters. Agricultural extension units should take active initiative in studying and mastering new achievements and new techniques, and coordinate with scientific and technical management units the work of experiments and demonstration of major techniques to be introduced. After techniques have been thoroughly mastered, they should be promptly extended so that results will be seen in production.

2. A Good Job of Dovetailing the Work of Research and Extension Units. In view of the current state of disjointedness between agricultural research and technical extension work, county level scientific technique management units should take the initiative in "building a bridge" between the two. The new achievements of research units should be promptly introduced to technical extension units (given to units needing it through the collection, collation,

and transmittal of data), to help extension unit and research unit mutual relationships and close relations between the two. This is an indispensable link in the promotion of research and in doing a good job of technical extension so that results achieved in agricultural science and technology will be translated into productivity.

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EFFORTS MADE TO HEAD OFF TOBACCO GLUT

Beijing RENMIN RIBAO in Chinese 30 Jan 82 p 3

[Article: "Need to Strengthen Planning to Overcome Blindness in Tobacco Production. Person in Responsible Position at China Tobacco Company Replies Correspondent's Questions"]

[Text] In order to strengthen planning, overcome blindness, and increase economic benefits, a responsible person in the China Tobacco Company has replied to the correspondent's questions about this year's tobacco production.

Question: What was the situation in national tobacco production last year?

Answer: Last year a hearteningly bumper crop was harvested, output reaching an all-time high. As a result of the serious attention given by party and government leaders at all levels, the practice of a system of responsibility for production by rural villages, and state increase in procurement prices paid for flue-cured tobacco, tobacco production developed very rapidly. In 1981 the country grew more than 9 million mu of tobacco, a more than 3 million mu increase over the previous year. Gross output of flue-cured tobacco was 25 million dan, a 70 percent increase over the previous year. This not only reversed a situation of supply not being able to keep up with demand, but also increased by 3 million dan the amount held in storage. Consequently, when arrangements were made for tobacco production this year, it was necessary to give attention to the changed situation and guard against blind expansion of the growing area so as to avoid large stockpiles of tobacco following the autumn harvest.

Question: Is it true that a tendency toward blind expansion of the growing area has now occurred in tobacco production?

Answer: Blind expansion of the growing area is currently a dominant tendency. This year the tobacco growing plans of all tobacco growing areas have been substantially increased. An example is Henan Province, which last year grew 2.3 million mu of tobacco and which plans to grow 3 million mu this year. In view of the expansion by each prefecture and county, the actual increase may amount to 4 million mu. Last year Heilongjiang Province grew 280,000 mu, and this year actual arrangements call for 600,000 mu, an increase over last year of between 4 and 5 million mu.

Tobacco production has to be compatible with cigarette production. There is a very great limit to annual increases in the number of cigarettes sold, so if there is blind expansion in tobacco production, inevitably tobacco supply must exceed demand. This would contribute to blind development of small tobacco plants and handmade cigarettes outside of plan, which would throw the market into turmoil. It would also put pressure on the growing area for grain and other economic crops.

Tobacco production must also be commensurate with capabilities to cure it and store it. At the present time, in most of the tobacco growing provinces, flue curing capacity is largely insufficient, and in some provinces such as Heilongjiang, there is none. Since storage capacity is limited by the number of warehouses, funds, and manpower, a serious shortage situation could not be solved within a short period of time. Should tobacco output dramatically expand, inevitably a large quantity of tobacco leaf could not be cured and there would be no place to store it. This would both greatly lower cured tobacco quality, and place many burdens on procurement units with the result that much tobacco would be damaged, both the country and tobacco growing peasants sustaining losses.

Question: Where should the emphasis go in tobacco production this year?

Answer: Tobacco is one of China's main economic crops. Planning must be strengthened and blindness overcome. All tobacco growing areas should arrange for tobacco production in accordance with plans handed down by the state, and they should guard against expansion at every level along the line. Signing of procurement and marketing agreements is a good way, which can closely link state plans and tobacco growing peasant production. Effective and workable actins have to be taken to effectively limit the blind growing of tobacco.

During the past several years, the trend toward decline in tobacco quality has not been reversed. This year, improvement in quality should be the focus in tobacco production. In organizing and implementing production plans, quality requirements must also be levied. Scientific farming of tobacco should be introduced and field care should be intensified, increase in earnings relying on improvement in tobacco quality and production of more fine quality tobacco, while increasing varieties of cigarettes that suit demand, and making a contribution to expansion of cigarette exports.

In summary, the agricultural economy is a major part of the national economy, and economic planning must be paramount in the agricultural economy, market regulation playing an auxiliary role. One should not suppose that with the implementation of various forms of a system of responsibility in rural villages, planning is no longer necessary. There can be no lopsided emphasis on peasant freedom of planting, for otherwise state plans will come under attack. In the end, peasant activities have to be channeled within the scope of state plans. Only in this way can the peasants' long term interests be advanced, and both the peasants and the state benefit.

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BRIEFS

AERIAL SEEDING--China's general administration of civil aviation will dispatch 68 planes in 1982 to seed 6.55 million mu of land with trees and grass from the air. Since early spring the aerial seeding work has been carried out rapidly from the south to the north in 17 provinces, municipalities and autonomous regions. As of the end of March the Civil Aviation Administration had dispatched 36 planes and had seeded over 1.3 million mu of land. [OW111221 Beijing Domestic Service in Mandarin 1200 GMT 8 Apr 82]

CSO: 4007/363

AGRICULTURE MINISTRY MEETING VIEWS COOPERATION

OW021335 Beijing XINHUA Domestic Service in Chinese 1138 GMT 31 Mar 82

[Text] Beijing, 31 Mar (XINHUA)--The Ministry of Agriculture recently held a national meeting in Beijing on international economic and technological cooperation in agriculture. The meeting discussed the question of using the present favorable international conditions to strengthen international economic and technological cooperation and push the country's agricultural modernization forward.

At the meeting, the departments concerned introduced the conditions and prospects for international economic and technological cooperation activities carried out by the country in agriculture. The country has now developed agricultural contacts with more than 80 countries, and the economic and technological cooperation, whether multilateral or bilateral, has been expanding and increasing every year. There is a wide scope of international economic and technological cooperation in agriculture.

Some representatives of provinces, municipalities and autonomous regions who have conducted preliminary international economic and technological cooperation in agriculture exchanged their experiences at the meeting. Their experiences were mainly:

In selecting projects in construction, scientific research and imported equipment in international economic and technological cooperation, it is imperative to proceed from the needs of the country's agricultural modernization and select those projects that are conducive to solving the crucial problems in the country's agricultural production. We must also hold demonstrations of these projects. Through demonstrations of models, we can solve many problems with one stroke.

To strengthen international economic and technological cooperation and raise funds for auxiliary equipment in the country, it is necessary to make overall arrangements, adopt various methods and let our many small savings add up to a lot in order to play a greater role. The imported items for cooperation can be handled by agricultural departments in conjunction with the units in the provinces, municipalities and autonomous regions concerned or with the collective units.

In conducting economic and technological cooperation with foreign countries, it is necessary to adopt various flexible methods with economic results that reflect production characteristics and conditions.

Good business management, adherence to economic accounting, emphasis on economic results and avoidance of eating "in the canteen the same as everyone else" are mandatory for construction projects.

In his summation speech, Agriculture Minister Lin Hujia reaffirmed these experiences and praised the agricultural departments of the various provinces, municipalities and autonomous regions for their enthusiasm in conducting international economic and technological cooperation. More than 200 construction projects were proposed at the meeting by various localities for international economic and technological cooperation.

CSO: 4007/363

MEETING COMMENDS RESULTS IN AGROTECHNIC RESEARCH

OW031230 Beijing XINHUA in English 1216 GMT 3 Apr 82

[Text] Beijing, 3 April (XINHUA)--China has in the past 7 years reaped an extra of 16.5 million tons of rice by expanding the area under a hybrid strain, according to a meeting held in Beijing today to commend and award individual and units outstanding in popularising results of agricultural scientific research.

Trial-planting of the hybrid paddy rice began 7 years ago in Hunan Province, and the strain is now planted to a total of 5.33 million hectares in Southern China. Per hectare yield of the strain averages 0.75 tons more than conventional strains. Agrotechnicains of Hunan, Sichuan, Fujian and Jiangxi Provinces were commended at the meeting for their help in popularising it.

A total of 1,248 units and 924 individuals received citations and bonuses for their role in the popularisation of 220 major scientific results in agriculture, animal husbandry, aquatic production, land reclamation, water conservancy, forestry and meteorology. Held by the state agricultural commission and the state scientific and technological commission, the meeting was the first of its kind ever held in China.

The Research Institute of Oil Bearing Plants under the Chinese Academy of Agricultural Sciences and other units were commended for helping popularise high yielding, early ripening rapeseed strains and advanced cultivation techniques. Thanks to their work, in 1980 China was able to harvest 515,000 tons of rapeseed more than in 1978, an increase of 28 percent. During the same 1978-80 period, however, the area under rapeseed crops increased ten percent.

The Animal Husbandry Bureau of the Xinjiang Uygur autonomous region and the "1 August" Agricultural College of Xinjiang were commended for having developed techniques for breeding improved strains of fine-wool sheep. Thanks to popularisation of these techniques, fine-wool sheep population in China increased from less than 10,000 in the early post-liberation years to 36 million in 1980.

CSO: 4020/117

'GONGREN RIBAO' CITES FORECAST FOR FARM MACHINERY

OW021345 Beijing XINHUA in English 1200 GMT 2 Apr 82

[Text] Beijing, 2 April (XINHUA)--China has just issued its first forecast of market demand for farm machines and implements in the wake of the national drive to maximize production that caters to the needs of society.

According to today's WORKER'S DAILY, the Ministry of Agricultural Machinery has conducted sample investigations in 14,161 production teams and 1,628 county farm machinery companies on the demand and sales of farm machines and implements. This has enabled the ministry to forecast the types and quantities of major farm machines and implements that will be in demand each year during the 1982-85 period.

For example, for 1982 it is estimated that 46,707 tractors with capacities ranging from 20 to 100 horsepower will be needed for the domestic market. The corresponding figure is 200,799 for walking tractors with capacities ranging from three to 15 horsepower.

Demand for walking tractors and other small farm machines is growing, said the WORKERS' DAILY. The paper attributed this to the current rural policy under which production quotas are fixed on a household basis or smaller, more efficient groups instead of on production teams as in the past.

While it is decreasing on a national scale, demand for larger tractors remains strong in places where farmland is plentiful in proportion to the population. People's communes and state farms in the Songneng Plain and the plain between Heilong, Wusuli and Nenjiang Rivers in Northeast China, major grain and soybean producer, are expected to absorb 35 percent of larger tractor sales for 1982, the paper said.

Also in demand for the 1982 domestic rural market are 17,625 lorries, 51,287 spray irrigation machines and 144,589 powered husking machines.

This first forecast of national demand for farm machines and implements, said the paper, is an attempt to help "improve China's planned economy."

CSO: 4020/117

BRIEFS

'FOOD WEEKLY' PUBLISHED--Beijing, 2 Apr (XINHUA)--FOOD WEEKLY, China's first paper on food science went on the news stands today. The tabloid selling for 3 cents will be published every Friday by the Research Institute of the food and brewing industries under the Ministry of Commerce. The paper has a food therapy column, and specialists and doctors will be invited to contribute articles on the treatment of diseases such as diabetes and obesity. Government policies on the production and distribution of food are also explained. [Beijing XINHUA in English 1216 GMT 2 Apr 82 OW]

CSO: 4020/117

'GANSU RIBAO' EDITORIAL ON TREE-PLANTING CAMPAIGN

SK060926 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 5 Apr 82

[GANSU RIBAO 5 April editorial: "Continued Efforts Should be Made to Plant Trees and Grass"]

[Excerpts] The editorial notes: Now is an excellent season for planting trees and grass. But this season will not wait for the people and, therefore, we must make great efforts and try in every possible way to fulfill or overfulfill the 1982 spring afforestation plan. Since late February, a mass campaign for tree and grass planting has been gradually launched from the Longdong Plateau to the Hexi corridor and from the banks of the Bailongjiang River to the banks of Huanghe River.

However, compared with the assigned quotas for the first year of the all-people voluntary tree-planting campaign, the progress of tree-planting work is still very slow in some localities. Leaders in some areas do not have a clear understanding of the far-reaching meaning of the tree-planting campaign and pay less attention to grass planting work. At some places, the tree-planting work remains at the stage of planning and making arrangements and has not been put into action. In other words, they fail to integrate the party Central Committee's call with the people's conscientious actions. These situations must be improved quickly.

At present, a conspicuous problem is the shortage of nursery stock. Many localities have eased the shortage of nursery stock by planting trees, bushes and grass simultaneously and by planting roots and shoots, transplanting cuttings and directly sowing seeds. But, to thoroughly ease the shortage of nursery stock, both leaders and the masses should make concerted efforts to achieve success in construction of nurseries and grasslands and in the work of growing nursery stock and collecting seeds.

CSO: 4007/363

BRIEFS

GANSU COLD WEATHER--Affected by the cold weather in the Soviet Union, Gansu Province will have a 6-class wind. On 6 and 7 April, dialy average temperatures in Dingxi, Pingliang and Qingyang Prefectures and in Lanzhou Municipality will drop 5 to 7 degrees. At the same time, light rainfall with snow will spread over many localities. [SK072240 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 5 Apr 82]

CSO: 4007/363

TINKERING TO PRODUCE SMALL, LOW-COST, FUEL EFFICIENT FARM MACHINES REPORTED

Guangzhou GUANGZHOU RIBAO in Chinese 2 Feb 82 p 1

[Article by Wang Xide [3769 1585 1795]: "Provincial Farm Machinery Institute Personnel Actively Research and Develop New Products; Devote Efforts to Products That Are Light and Handy, Durable, and Low in Price"]

[Text] Last year, all levels of farm machinery research units worked together with producing enterprises to launch research and development on new products and to improve old products. They have completed work on 17 items, and have had partial success with another 14 to win outstanding achievements. In order to respond to changes in rural organization and meet peasant needs for farm machines and implements that are light, small, handy, low in price, and durable, farm machinery research personnel actively launched a research movement, successfully developing a pneumatic peanut sowing combine capable of planting between 7 and 9 mu of peanuts an hour for a 50-fold increase over hand methods in sowing efficiency, and with a 97 percent sowing precision. Four horsepower low chassis hood-up plows, rear axle cultivators, and ditching machines developed by Guangzhou Municipal Farm Machinery Institute personnel have solved problems in mechanized cultivation of vegetable fields. In order to conserve energy, farm machinery research personnel converted the 2105 diesel engine to a single combustion methane engine. Following conversion, maximum power was 22 horsepower and fuel consumption was low (0.40 cubic meters of methane being consumer per horsepower hour). In order to solve the contradiction of fuel in rural areas, this new course was taken. These machines have now been extended for use in rural villages with very good results. Following prototype machine certification, the 180 diesel engine developed by the Shaoguan Diesel Engine Plant has performed reliably to fill a gap for 7 horsepower small diesel engines in Guangdong Province. Other successfully developed or converted products include the Zhujiang No 4 grain combine harvester, a shoulder-carried hand-operated dusting machine, a wet grain winnowing assembly, an eight channel data collating device, and the MB-220 surge pump, technical performances of which meet advanced standards.

In order to satisfy requirements in the people's livelihood, farm machinery research personnel improved rural rice milling machines. One such was the No 5 rice machine, which following improvement, had a high rice output rate, and rice was clean. Such rice machines are small and handy, structurally rigid, light in weight (20 kilograms lighter than formerly), highly efficient, and attractive in appearance. They have been acclaimed by users.

In order to increase overall performance of diesel machines in Guangdong province, farm machinery research personnel launched action against basic parts. A change was made from the former sodium fusion to antimony fusion for the pistons on the 190. Various performance tests showed that this not only improved the machine's performance, but also almost doubled its useful life. Formerly the 190's cylinder casing was made of high phosphorous cast iron, which has since been changed to warwickite cast iron. Various tests and actual use show life has been increased by 60 percent. These basic parts meet advanced domestic standards, and have increased overall diesel machine performance and useful life.

9432
CSO: 4007/220

GUANGDONG

BRIEFS

GUANGDONG NATURAL DISASTER MEETING--The Guangdong Provincial People's Government held a meeting in Shunde County from 30 March to 3 April to sum up experiences in struggling against floods, droughts and typhoons and arrange this year's work. Provincial Vice Governor Xue Guangjun presided. At the meeting, Foshan and Shantao Prefectures, Guangzhou Municipal and Shunde, Qingyuan, Dongguan, Gaoyao and Yangjiang Counties introduced their experiences. The provincial meteorological observatory pointed out that heavy rains are expected this year. All localities must be prepared for nautral disasters. [Guangzhou Guangdong Provincial Service in Mandarin 2350 GMT 7 Apr 82 HK]

GUANGDONG ALLOCATES RELIEF FUND--Yesterday, the Guangdong Provincial People's Government allocated relief funds of 5 million yuan to support the people in the areas struck by natural disasters last year in making arrangements for their livelihood. Last year, natural disasters frequently occurred in the province. Relatively serious natural disasters occurred in Shantou, Zhanjiang and Foshan Prefectures. At the end of January this year, the provincial people's government issued a circular on doing well in grasping relief work through production before summer harvest this year and made further arrangements for relief work throughout the province. Recently, the provincial civil affairs department held a special forum on relief work through production in some seriously stricken areas. The forum seriously examined the situation of relief work through production in the province, further looked into relief work through production before summer harvest and took effective measures to stabilize the masses' livelihood. [HK250847 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 17 Mar 82]

MECHANIZED SUGARCANE PLANTATION--Guangzhou, 2 Apr (XINHUA)--Construction has begun on China's first mechanized sugarcane plantation in Guangdong Province which will become a major center of research in the production of sugarcane. The plantation is being built by the provincial general bureau for land reclamation and the Zhanjiang Prefecture Land Reclamation Bureau with an investment of 3 million yuan. Planning for the first phase of the project, covering more than 500 hectares, has been completed, and transformation of roads, fields, irrigation systems and mechanized warehouses has begun. The investment was made by the Ministry of State Farms and Land Reclamation and the Provincial Agricultural Commission. Machines and sets of euqipment, numbering 41 in all, of 21 different types, including ploughs, sugarcane planters, cultivators, multiple-row weeders and travelling sprinklers have been imported from Australia. Experiments will be carried out on the farm to collect data for mechanization of sugarcane production, raising output and expanding the sugar refining industry. [Text] [Beijing XINHUA in English 0145 GMT 2 Apr 82 OW]

CSO: 4020/117

GUANGXI

BRIEFS

SUGAR PRODUCTION INCREASE--Nanning, 3 Apr (XINHUA)--Sugar output in Guangxi, one of China's biggest cane sugar producing areas, is estimated to exceed 500,000 tons during the 1981-1982 refining season. This will be 16 percent above the previous refining season, according to regional authorities. So far 434,000 tons of sugar have been purchased by the commercial department, 106,000 tons more than the same period last year. Subtropical Guangxi has aboundant rain and a mild climate favorable for sugarcane growing. Last year sugarcane was grown on 113,000 hectares with a total yield of 4.4 million tons. Both the planting area and sugar output ranked second to Guangdong, leading producer on the Chinese mainland. Guangxi now has 67 refineries in operation with an aggregate daily refining capacity of 43,200 tons. [Text] [OW050545 Beijing XINHUA in English 0703 GMT 3 Apr 82]

CSO: 4020/117

HEILONGJIANG CURBS ARBITRARY EXPANSION OF TOBACCO ACREAGE

SK020954 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 1 Apr 82

[Station commentary: "We Must Make Arrangements for Flue-cured Tobacco Production in Accordance with State Plan"]

[Text] This year our province plans to grow 600,000 mu of flue-cured tobacco and procure 1.8 million dan of tobacco leaves. This plan is relatively practical. It will essentially balance production and demand. However, what is noteworthy is that some localities have a tendency to deviate from the state plan and arbitrarily expand tobacco acreage. Unlike other farm products, tobacco leaves have a lot to do with the nature of commodities, because they have only one use. Both too much and too little must be avoided.

Information provided by departments concerned indicates that the amount of tobacco leaves needed by our province's flue-cured tobacco industry, required in the contracts signed with other provinces and needed for market supply and to be damaged during the processing is less than 1.8 million dan this year. If we grow too much tobacco leaves, our storage capacity, procurement facility, equipment and processing capacity will be incompatible and we will be unable to procure, deliver, process and store them. This will cause heavy losses to both the state and the peasants. This issue must arouse the attention of commune and brigade cadres and the broad masses of commune members and be solved in a serious manner.

Leading departments at all levels in flue-cured tobacco producing areas must learn from Wangkui County to inform the broad masses of cadres and the people of the economic information about tobacco production and demand, conduct ideological education on giving consideration to the interests of the state, collectives and individuals and help cadres and the masses to enhance their understanding of the nation and the planning, voluntarily combine partial and local interests and the state's interests and to make proper arrangements for tobacco production under the guidance of the state plan.

CSO: 4007/363

BRIEFS

HEILONGJIANG SOWING PLAN READJUSTMENT--To reap a better harvest this year, Hailun County, Heilongjiang Province, has partly readjusted its sowing plans by following the state production guidance. The county has decided to sow 1 million mu of soybean, 1 million mu of corn and sorghum and 900,000 mu of wheat, rice and other food grains. Its soybean sowing acreage this year is a 330,000 mu increase over the 1981 figure. However, the county plans to sow 280,000 mu of cash crops this year, which is a 150,000 mu decrease as against the 1981 acreage. [SK141132 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 13 Mar 82]

HEILONGJIANG FLAX PRODUCTION--Heilongjiang Province recently sponsored a conference on readjusting the acreage of flax. The conference put forward the following assignments: The 1982 total flax sale is estimated to be 9,000 tons, and 1983's will be 5,600 tons. Suihua Prefecture is responsible for planting 125,000 mu of flax this year; Nenjiang Prefecture, 36,000 mu; Songhuajiang Prefecture, 15,000 mu; Hejiang Prefecture, 12,000 mu; Heihe Prefecture, 6,000 mu; and Mundanjiang Prefecture, 6,000 mu. [SK082242 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 7 Apr 82]

WHEAT SOWING--Bayan County, Heilongjiang Province, as of 7 April had successfully completed wheat sowing operations on 190,000 mu of farmland--6 days ahead of schedule. [SK082242 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 7 Apr 82]

CSO: 4007/363

POTASSIUM DIHYDROGEN PHOSPHATE FERTILIZER YIELDING GOOD RESULTS

Beijing RENMIN RIBAO in Chinese 21 Jan 82 p 2

[Text] Potassium dihydrogen phosphate, KH_2PO_4, is a white chrystalline substance, containing 52 percent active phosphorus and 35 percent active potassium. It is odorless, tasteless, nontoxic, easily dissolved in water, and a high density phosphorus-potassium compound fertilizer. It has been used in 16 provinces (cities) such as Henan, Hebei, Hubei and others, in recent years, in increasingly expanding acreages. In Henan, the method of spraying has been continuously adopted for 3 years with very good results.

Potassium dihydrogen phosphate is suitable for various cereal and economic crops. It can also be applied to such crops as potato, sweet potato, tobacco for which fertilizers with the chloral radical cannot be applied. Methods of applying potassium dihydrogen phosphate include mainly seed soaking, seed mixing, root application, and spraying on leaves. When it is used to soak the seeds, to mix with seeds, or to apply to the roots, it can supply the seedlings with phosphorus and potassium which they need in a hurry to cause germination to be complete, seedlings to be strong, leaves to be green, stalks to be high, root systems to be well developed in order to build a good foundation for high yield.

When it is sprayed in a solution on the leaves, it enters the plant body quickly through air holes of the leaf-surface. In this manner the problem of reduced ability of the root system to absorb phosphorus and potassium in the later stages of growth of the plant may be overcome. It promotes the development of the root system to cause the plant to be healthy and strong, the spike to be long and large, the crop to mature early, and the yield to be high. Practices of various regions have proved that at present, the soils of China are generally deficient in phosphorus and potassium, and the supply of phosphorus and potassium fertilizers is also deficient. Under this condition, application of potassium dihydrogen phosphate on the leaf-surface is most economical and effective. Generally, a yield increase of 5-10 percent may be obtained to gain an economic benefit of 5-6 times the investment. If the crops are also deficient in such trace elements as zinc boron, etc, they may be added in the potassium dihydrogen phosphate solution to be sprayed on the leaf-surface to produce even better results.

Observation and comparison in the past 3 years in Henan Province have proved that whenever potassium dihydrogen phosphate and petroleum growth accelerating agents are sprayed on crops, the function of the top 3 leaves of the plant is prolonged 3-4 days to increase the speed of starch filling. The appearance of the wheat spike shows obvious signs of improvement and the grain test weight is higher. For medium and low yield fields 1.5 jin per mu of urea may be added to the spray solution, the yield increase may be even greater than spraying potassium dihydrogen phosphate or petroleum growth accelerating agent alone. In case of disease and pest problems, such farm chemicals as dimethoate and thiophanate may also be added to control red spiders, white powdery mildew.

6248
CSO: 4007/236

BRIEFS

HENAN PREFECTURE CONTRACT SYSTEM--Shangqiu Prefecture has universally implemented the system of contracts for technology. Up to the present, some 9,700 households of commune members in 988 brigades of 90 communes throughout the prefecture have signed contracts with agricultural technicians for technology, and this system has played an important part in promoting the development of cultivation, breeding and processing trades. Last autumn, the prefecture carried out a pilot project in Huiting Commune in Xiayi County to conclude contracts for technology, and this project proved successful. Therefore, organs at all levels of the party and the government in the prefecture have vigorously popularized the system of contracts for technology. To speed up the popularization of the system and to train technicians of all kinds as quickly as possible, governments at all levels and relevant departments in the prefecture have run technical training classes of various kinds, established 18 sparetime peasant technical schools and trained some 170,000 technicians of 13 trades, including the growing of grain, cotton, tobacco leaves, fruit trees and day lilies, as well as forestry, animal husbandry, beekeeping, silkworm-breeding and fish-breeding. This has created favorable conditions for universally popularizing the system of contracts for technology. [HK241238 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 22 Mar 82]

SEASONABLE RAIN, SNOW--From 16 to 17 March, there was widespread rain and snow in Henan Province. The heaviest rain and snow occurred in the central part of the province, ranging from 20 to 30 millimeters over a wide area. Although some counties and municipalities in Anyang, Luoyang and Nanyang Prefectures received less rain and snow, they still received about 10 millimeters. As a result, signs of drought in the central and southern parts of the province were basically eliminated, and the drought in the northern and southwestern parts of the province has become less serious. This development is very advantageous to the promotion of the current wheat field management and the spring plowing. Both urban and rural people highly praised in unison the seasonable snow and rain. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 17 Mar 82]

CSO: 4007/363

READINESS OF MARKETS TO HANDLE HOLIDAY RUSH STRESSED

Wuhan HUBEI RIBAO in Chinese 23 Dec 81 p 1

[Article: "Efforts to Do a Good Job in Deliveries of Agricultural and Sideline Products Procured and to Actively Plan Busy Season Urban and Country Markets Emphasized in Telephone Conference Convened by Provincial People's Government"]

[Text] The Provincial People's Government convened a telephone conference in Wuhan calling on all jurisdictions to do further work in delivery of agricultural sideline products that have been procured, and to make active arrangements for urban and country markets during the busy season.

The conference was chaired by Deputy Provincial Governor Tian Ying [3944 5391]. Provincial Governor Han Ningfu [7281 1380 1133] addressed the conference.

Comrade Han Ningfu said further strong efforts should be made in grain procurement, and efforts made to procure more grain in bumper harvest areas without overdoing procurement. Simultaneous with attention to procurement of grain for storage, all jurisdictions should give attention to control of marketing, criticizing and correcting instances of genuinely unfair marketing. CCP committees and the government at all levels should provide for the masses' livelihood, and special provisions should certainly be made for masses in disaster stricken areas. Propaganda and indoctrination work should be conducted for cotton growing peasants for sales of cotton to the state. Only after production brigades had fulfilled their quota purchases could exchange procurement begin. Exchange sales apply to the portions retained by commune members in accordance with government regulations. Market controls should be buttressed to control the outflow of cotton. All jurisdictions should further intensify live hog procurement and deliveries. They should first assure fulfillment of delivery quotas, and in hardship places where local sales have been curtailed, deliveries should also be assured first. Fresh fish output may break the 300 million jin mark in the province this year, for an increase of about 10 percent over last year. Fresh fish procurement plans have also been fulfilled quite well. However, currently the quantity delivered amounts to only 50 percent of plan. All jurisdictions should follow the principle of making deliveries first and making local sales afterward, buying up the fish that should be bought up and delivering the fish that should be delivered to assure fulfillment of quotas. In the case of other category two agricultural and sideline products, particularly kinds of goods in much demand such as raw lacquer, tung oil, black wood fungus, tea and lily buds, fulfillment of quotas handed down by the province should be assured on time and in the right amounts.

Comrade Han Ningfu said that the overall situation in markets is currently good. Sources of supply of urban industrial goods and sources of supply of rural produce are fairly rich. Aside from pork and vegetables for which some shortage exists, provisions for other agriculture and sideline products have been rather well implemented. The maid problems in markets today are insufficiency in supply of goods that are very much in demand, disguised upward creep in prices of some goods, and insufficiently open channels by which industrial goods reach the countryside. Units concerned in all prefectures and counties should actively organize production and organize sources of supply to do a better job than last year in market planning for the new year and the lunar new year, so that goods will be of sufficient quantity, of good quality, and of many varieties, colors, and sizes. Conscientious work should be done particularly for varieties of goods closely interrelated to the lives of the masses. All jurisdictions should persevere in achieving priority supply to cities of agricultural and sideline products needed by both cities and countryside, and priority supply to rural villages of industrial goods needed by both cities and countryside. Business units must organize forces to do a good job of getting industrial goods into the countryside. Genuine strengthening of control over market prices must be done, corrective action being resolutely taken against those who take it upon themselves to raise prices or raise prices in disguised ways. All commercial units should also further improve their service attitude, improve quality of service, not permit short weighting or backdoor deals, and bend every effort to do a good job in market supply.

9432
CSO: 4007/211

HONGAN COUNTY'S VICTORY OVER DROUGHT REPORTED

Wuhan HUBEI RIBAO in Chinese 22 Dec 81 p 1

[Article by Fang Xiangming [2455 0686 2494] and Fan Changdong [2868 2490 2639]: "Hongan County Triumphs Over Serious Drought To Win Bumper Harvest. Promotes System of Responsibility Linking Calculation of Remuneration to Output, and Makes the Most of Strength of Collective Economy"]

[Text] Hongan County has promoted systems of responsibility for agricultural production, principally in the forms of linking output to individual members of the workforce, and "several unified" large scale assignment of responsibilities, which have aroused eagerness for production on the part of peasant masses to win a bumper harvest in this year of great catastrophe. As compared with 1980, the county's total grain output showed a 9.7 percent increase in output, total output of edible oils increased by 23 percent, total output of tobacco increased by 160 percent, and agricultural sideline gross earnings increased by 11.8 percent.

During the past 3 years, Hongan County has had two droughts and one flood. This year's drought endured for a long time. No soaking rain fell from the beginning of April until the second crop of rice was harvested, a period of almost 200 days. Leading members of the County CCP Committee probed the realities and helped production teams strengthen and perfect systems of responsibility for production, to solve new problems appearing in the course of the drought, and to use policies to stir myriad forces to join the struggle against drought to win a bumper harvest. In some seriously drought stricken areas, radishes were planted to replace the paddy rice that had been killed by the drought, and sesame was planted in place of peanuts killed by the drought so as to reduce losses to the minimum. In fighting the drought, the County CCP Committee attached extreme importance to past experiences in relying on the strength of the collective to combat national catastrophes, and it devoted attention to making the most of the superiority of the collective economy. The large and medium size reservoirs and the equipment for fighting drought installed by the collective since cooperativization have produced a fairly strong capability for fighting drought, and they played the role required in fighting the drought. All trades and industries also contributed forces to combat the drought and win a bumper harvest.

9432
CSO: 4007/211

WINTER AFFORESTATION, FOREST PROTECTION MAKING GAINS

Wuhan HUBEI RIBAO in Chinese 22 Dec 81 p 1

[Article: "Province's Winter Afforestation and Forest Protection Scores Gains"]

[Text] Winter afforestation and forest protection have scored remarkable gains in rural Hubei Province. Statistics from units concerned show that as of early December 1981 forest renewal in the province amounted to more than 3 million mu, tract afforestation covered more than 500,000 mu, young forests being tended covered more than 1.1 million mu, and hillsides closed to promote afforestation amounted to more than 7 million mu, increases of more than 50 percent over the same period last year.

Winter afforestation and forest protection in Hubei Province this year was done with considerable alacrity for the following several reasons. First, leaders at all levels gave rather great attention to development of forestry production. During the year, the Provincial CCP Committee and the Provincial People's Government convened five separate special conferences, and took a series of actions to help hasten development of forestry. For the more than 100 communes in the province in which forestry predominates, readjustments were made in requisition grain procurement quotas for preliminary solution to the problem of grainfields squeezing out forests. Second was diligent implementation of policies pertaining to mountain rights, forest rights, and mountains retained for private use. After all jurisdictions settled disputes about forest rights and put into effect a system of mountains retained for private use, forestry rights ownership certificates were issued. Third was establishment of various forms of systems of responsibility for forestry production, which linked quality of forestry production directly to the individual personal welfare of producers for an arousal of enthusiasm on the part of commune member masses for afforestation and forest protection.

9432
CSO: 4007/211

INCOME FROM NON-FARMING SOURCES REPORTED UP

Wuhan HUBEI RIBAO in Chinese 22 Dec 81 p 1

[Article: "Heartening New Situation Takes Place in Xinzhou County Economic Diversification With Readjustment of Structure, Specialized Contracting, and Linking of Output to Calculation of Remuneration"]

[Text] This year heartening changes have taken place in Xinzhou County where economic diversification has been fairly slow during the past several years. This is attributable to a readjustment of the internal structure of agriculture, which has aroused the enthusiasm of the masses, and to specialized contracting, which has opened broad vistas for economic diversification.

As a result of the influence of leftist deviation, this county formerly gave attention only to grain production to the neglect of economic diversification, a situation of "eating out of a large common pot" existing in distribution, which impaired enthusiasm of producers for engaging in economic diversification. Inspired last year by the speed of economic diversification of the Taoju Production Brigade in Wangji Commune and the Sandian Production Brigade in Sandian Commune, the County CCP Committee realized that only through the elimination of leftist influences, readjustment of the internal structure of agriculture, and institution of specialized contracting could manpower and natural resources by fully tapped and equitably used for the development of economic diversification. They thereupon changed an overwhelming majority of the more than 300 production brigades that had practiced brigade accounting to production team accounting, and clearly delineated the rights of communes, production brigades, and production teams to mountain forests and water surfaces. At the same time, they equitably readjusted the internal structure of agriculture so that fields suited to grain would be used for grain, fields suited for cotton would be used for cotton, and fields suited to other kinds of farming would be used for other kinds of farming. They also appropriately reduced the grain and cotton requisition procurement quotas of production brigades in mountain regions. In order to accomodate specialized contracting for economically diversified production, the county promoted an across the board system of responsibility of "unified administration", output being linked to individual laborers for large field production. Thus, personnel engaged in commune and brigade enterprises and in forestry, livestock raising, sideline occupations, and fisheries did not contract responsibility for fields, but rather were responsible only for specialized tasks contracted for.

In its economically diversified production, this county practiced three tier (commune, production brigade, and production team) administration, specialized contracting, and the linking of output to calculation of remuneration. Communes and production brigades practiced independent accounting with sole responsibility for profits and losses, some specialized contracting with teams or individuals also being done within enterprises. Production teams instituted specialized contracting and linking of output to calculation of remuneration for producers engaged in forestry, livestock raising, sideline occupations, fisheries and small handicraft industries, as well as for those engaged in the growing of non-staple economic crops, income derived from the contracting of production being made a part of unified distributions by production teams and earnings for overfulfillment of production quotas reverting entirely to producers or being proportionately given to them as bonuses. In cases of underfulfillment of production quotas, producers were held totally or partially responsible. Their grain rations were no less than those of the same category of workers engaged in production in the fields. A total of more than 90,000 members of the workforce in 22 communes, and more than 4,900 production teams in the county signed contract agreements. Gross output value of economically diversified contracting for the county in 1981 was more than 50 million yuan, and actual earnings may reach more than 70 million yuan. This is a more than 15 percent increase over last year, and 37 percent of commune and brigade gross income for the entire year, for an all-time high.

9432
CSO: 4007/211

BRIEFS

SUCCESS SCORED AGAINST TUBER STEM MOTHS--Agricultural and supply and marketing units in Badong County have courageously innovated technology using "7216" micro-organic pesticide to prevent and control tuber stem moths, achieving success for the first time and spreading the practice. Most years Badong County grows about 300,000 mu of potatoes. In both area and output, potato growing accounts for 30 percent of annual food crops and are important in the livelihood of people throughout the county. However, during their period in storage, potatoes develop tuber stem moths (which are called speckled potato bugs by the local people), which cause damage to as little as 20 million jin to as much as more than 40 million jin. Losses have become even more serious as tuber stem moths have moved upward in the mountains from low hills along with the spread of burley tobacco growing. Some brigades have stopped growing potatoes, and some brigades have had their food supply hurt and production of burley is being threatened. Beginning in 1977, the county's agriculture units and supply and marketing units worked together in courageous experimental use of "7216" micro-organic pesticide for the prevention and control of tuber stem moth, obtaining fairly good results. In 1980, they treated more than 80,000 jin of seed potatoes, scoring remarkably good results. The provincial organisms prevention and control station and the prefecture science commission believed this represented a major breakthrough in prevention and control of tuber stem moths, particularly since this method had no toxic effects on potatoes used for food, and since human and animal safety could be guaranteed. This year the 2.5 million jin of potatoes treated by 21 communes including Chadian, Nanping, Qiqiu, Zaozi, Yaohui, and Yangliu showed 90 percent effectiveness in control. The masses of commune members hurriedly wrote letters praising the effectiveness of "7216" and praising both the party and the government for doing a good thing for them. [Wuhan HUBEI RIBAO in Chinese 21 Dec 81 p 2] [Text] 9432

PEASANTS' PAPER--A small paper for peasants, NONGJIA LE [HAPPINESS OF PEASANT FAMILIES], has been published jointly by HEBEI RIBAO and the Hebei Provincial supply and marketing cooperative since January of this year. The paper contains articles on knowledge and experience of crop cultivation and animal breeding and on various ways to develop sideline production in rural areas. It also contains market information and general knowledge concerning everyday life. The circulation has been as many as 270,000 copies per issue. [OW071255 Beijing Domestic Service in Mandarin 1600 GMT 29 Mar 82]

COUNTRYSIDE INCREASES INCOME--Statistics indicate that in 1981, the peasants' income in Hubei rural areas has increased by a large margin. In the suburban areas of Xiangfan, Yichang, Wuhan and Shashi municipalities, Hongshan Prefecture and Hanyang, Jiayu and Puqi Counties, the average income per capita has exceeded 150 yuan. The number of brigades in which average income per capita exceeded 300 yuan has increased from 79 in 1980 to 145 at present. Even poor and backward Enshi Prefecture made progress. There are 7 brigades whose average income per capita amounted to 300 yuan. The highest income per capita among brigades amounted to 861 yuan. The highest income per capita among production teams amounted to 1,009 yuan. [HK100337 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Mar 82]

POTASSIUM DIHYDROGEN PHOSPHATE EXTRACTION--Correspondents of RENMIN RIBAO report that Hubei Provincial Research Institute of Chemistry succeeded in using the ion exchange method to produce potassium dihydrogen phosphate. This new achievement of scientific research was officially confirmed by the National Potassium Dihydrogen Phosphate Technology Certification Conference held most recently in Huangmei County of Hubei Province. Potassium dihydrogen phosphate, a white crystalline substance, is a highly efficient complex fertilizer. For many years, the heat method of neutralizing phosphoric acid, caustic potash, or potassium carbonate to produce potassium dihydrogen phosphate has been used in China. These raw materials are costly and the availability of this fertilizer has, therefore, been limited. The Hubei Research Institute of Chemistry started in 1977 to study the new technique of using ion exchange to produce it. Later, intermediate testing was carried out in Huangmei County Chemical Plant before proceeding with expanded production in Wuhan Municipal Inorganic Salts Chemical Plant. The quality of the products finally reached the standard of the products using neutralizing method. Compared with the neutralizing method, the cost of the raw materials is reduced to less than two-thirds. [Text] [Beijing RENMIN RIBAO in Chinese 21 Jan 82 p 2] 6248

PEOPLE'S LIVELIHOOD IMPROVES--The Hubei Provincial Statistical Bureau investigated the income and expenditures of 954 peasant households. The investigation reveals that the income and living standards of peasant households in the province in 1981 were better than in 1980. The per capita income of these 954 peasant households in 1981 reached 217.4 yuan, 49.8 yuan more than in 1980. With the increase of the income of peasant households, their expenditures have increased and their living standards have improved. The per capita expenditures of the 954 peasant households in 1981 reached 183.3 yuan 20.3 percent more than in 1980. Their expenditure on food has dropped while their expenditure on clothing, shelter and goods for everyday use has increased. This shows that after peasants have sufficient food, they have more money to spend on clothing, housing and goods for everyday use. In 1981, every 100 households of the 954 peasant households had 16.1 bicycles, 18.2 sewing machines, 41.9 radio sets and 50.5 watches and clocks, 30 to 40 percent respectively more than in 1980. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 28 Mar 82]

PEASANTS' HOUSING IMPROVES--The Hubei Provincial Statistical Bureau has recently conducted a survey of the housing conditions of 954 peasant families. This survey reveals that since 1978, peasants' housing conditions in the province have improved. In 1981, 954 peasant families built 245 new houses, 23.7 percent more than in 1978. An average of one in every four families built a new house. Each family has an average of 3.6 houses and each person has an average area of 15.3 square meters of housing. Over the past few years, the quality of peasants' houses has also improved. In 1981, the average construction price of a new peasant house was 412 yuan 1 jiao, 61.3 percent higher than in 1978, when the average construction price was 198 yuan 9 jiao. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 22 Mar 82 HK]

CSO: 4007/211

BRIEFS

COUNTY GRAIN OUTPUT--Total grain output of Shuyang County, Jiangsu, reached 918 million jin in 1981, an increase of more than 140 million jin over that in 1980. [OW221017 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 14 Mar 82]

CSO: 4007/363

JIANGXI SHOWS ORANGE, TANGERINE GROWING UPSURGE

OW081015 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 7 Apr 82

[Text] According to station correspondent (Liao Zhenfeng), guided by Comrade Hu Yaobang's letter regarding the policy to be taken in developing orange and tangerine production in southern Jiangxi and the Provincial Party Committee's decision on actively developing orange and tangerine production, a new high tide in growing oranges and tangerines has swiftly developed in most places of Jiangxi in accordance with the principle of adapting to actual local conditions.

By late March, some 11 million orange and tangerine trees had been planted in Jiangxi Province, and increase of some 100 percent over 1981. Of the 11 million trees, individual growing accounts for 39 percent, and state farm growing for 3 percent.

This year, more orange and tangerine trees have been planted in Jiangxi than in any other corresponding period since the founding of our country. The all-out effort to grow oranges and tangerines this year manifests itself mainly in the special attention given by leading personnel; the higher enthusiasm among the broad masses of people; the quicker pace of development; and the vast participation of individual growers as compared with previous years.

Leading groups for growing oranges and tangerines have been established in 19 cities and counties in Ganzhou Prefecture, while county-level agriculture bureaus have set up inspection stations to maintain control of orange and tangerine production. All this has heightened the masses' enthusiasm for growing oranges [and] tangerines. By late March, some 2.54 million orange and tangerine trees had been planted in Ganzhou Prefecture, covering a total acreage of 41,000 mu. Fifty-nine percent were planted by individuals, 30 percent by collectives and 11 percent by state farms. The new acreage of oranges and tangerines planted in the prefecture in 1982 almost equals the total acreage of oranges and tangerines in all of southern Jiangxi in the past.

Furthermore, the quality of sowing in most localities in 1982 is better than in previous years. In Yichun County, some 11,000 mu of oranges and tangerines have been planted by commune members on hillside fields or idle land near their houses. They have selected fine strain seeds, used thorough planting methods, and applied sufficient fertilizer to the fields. Agrotechnicians have said that the diversity of seed varieties and the adequate supply of fertilizer have resulted in better quality sowing this year. Meanwhile, many localities have also adopted various methods of vigorously supporting individual growers by allocating them special funds to purchase saplings and fertilizer, establishing technical training classes and distributing technical data.

CSO: 4007/363

EXCESSIVE GROWING OF ECONOMIC CROPS DISCOURAGED

Jilin DAZHONG RIBAO in Chinese 4 Feb 82 p 2

[Article by Lin Shuxiang [2651 2579 7449]: "Several Thoughts About Readjustment of Agricultural Crop Patterns"]

[Text] Since the Third Plenary Session [of the 11th Party Central Committee], Jilin Province has diligently implemented the party's rural economic policies and has carried out a readjustment of the internal structure of agriculture and of agricultural crop patterns on the basis of the principles of "adaptation of general methods to local situations and making the most of advantages. Results achieved have been rather good, and a great change has taken place in the rural situation. A comparison of 1980 with 1979 shows that despite a 4.7 million mu reduction in the area planted to grain, the total output of both grain crops and economic crops showed substantial growth, grain output increasing by 4.2 percent, peanut output increasing by 49.5 percent, cotton output increasing by more than threefold, and flue-cured tobacco and other economic crops also showing substantial increases. Despite the great drought of 1981, which occassioned a slight decline in output of grain and peanuts, varying degrees of increase took place over 1980 in economic crops and economic diversification, gross output value of agriculture increasing by more than four percent over 1980, and distributions to commune members from the collective averaging increases of about 15 yuan. All of this was the outcome of correct impelmentation of the program of readjustment. At the same time, it showed that in an overall sense, readjustment of agricultural crop patterns in Jilin Province tended to be substantially equitable.

However, looked at in terms of the present situation, because of the prevailing overly low price paid for grain, parity prices paid for grain crops and economic crops are not sufficiently equitable. Mu for mu, net profit from grain is far far lower than from economic crops. When the rather favorable award sales policy for economic crops is added to this, peasants are impelled to want to grow economic crops. Looked at in terms of the development trend, the growing area for cotton, peanuts, and flue-cured tobacco will continue to expand, and the grain growing area may possibly continue to shrink. Serious attention should be aroused by these new situations that have appeared in the readjustment of agricultural crop patterns.

In the readjustment of agricultural crop patterns, solution to the problem of grain self-sufficiency should be placed in a commanding position. The policy put forward by the CCP Central Committee of "positively no relaxation in grain production, and active development of economic diversification" is entirely correct. While maintaining continued steady growth in agricultural production, we should strive to develop economic diversification. Ours is a province with a huge population, and the problem of food to eat ramifies into the national economy and the people's livelihood, and into stability and unity. Consequently, it is necessary to base readjustment of the agricultural crop pattern on the gradual realization of grain self-sufficiency within the province. The grain problem should not, and cannot, be shifted to the eating of imported grain or grain brought in from outside the province. Increase in imports comes up against not only the problem of volume of turnover in international markets, but also the problems of port handling volume and transportation capabilities. Therefore, the extreme limits for national grain imports cannot be allowed to break, at minimum, those of the past several years. In national terms, the continued expansion of the economic crop area is not just a problem for Jilin Province alone, but applies to other provinces as well. Demand is for decrease in the grain leaving the province and increase in the amount coming into the province. If the amount of grain brought into the province is overly large, transportation costs cannot be afforded. It may be seen that one cannot pin hopes on movement of grain into the province. Under ordinary circumstances, movement of grain from outside the province can be done only to regulate, turn over, and augment grain within the province.

Readjustment of agricultural crop patterns must be done in equitable proportions. Given a certain time and a certain material and technical level as well as management levels, if grain crop and economic crops patterns are proportionally equitable, they will be mutually advancing, and rather good economic benefits will be derived. If these objective laws are contravened, and there are great subjective fluctuations in areas planted with a mutual jostling for space, the converse result will take place. In terms of the current situation in Jilin Province, the grain acreage amounts to less than 1 mu per person, and the area planted to oil-bearing crops, cotton, tobacco, and such major economic crops is no more than the actual area sown in 1981. This pattern is relatively compatible with the province's realities, and economic benefits are also relatively clear. The lessons learned from our former lack of concern about objective conditions in boundless expansion of the area planted to grain should now be given extreme attention so we do not go from one extreme to another, boundlessly expanding the economic crop growing area to create new proportional imbalances.

In the readjustment of agricultural crop patterns, good handling of the relationship between the overall situation and the partial situation must be done. Generally speaking, the policy of "adaptation of general methods to local situations and making the most of advantages" is universally applicable. However, making the most of individual advantages can obtain fairly good economic results only when it accords with the overall welfare. This is because ours is a socialist country in which the socialist economy is a planned economy, and when planned direction is departed from, economic work devolves into a state of anarchy. The agricultural economy is an important integral part of the national economy in which planning is dominant, market regulation being supplementary. According to preliminary soundings, the area of Jilin Province suitable for the growing of cotton is less than 30 million mu, and the area suitable for the growing of peanuts is less than 20 million mu. But should these amounts be grown? At the present time, obviously not. In terms of the province as a partial entity, economic benefits might be greater, but in terms of the whole, first of all, the national grain balance should not decline, and secondly, there is a limit to demand for large amounts of agricultural sideline products, including demand in domestic markets, international markets, and processing capabilities. When the limit is exceeded, accumulation in inventory results, and the peasants enthusiasm may be dampened. Now that rural villages are practicing various forms of a system of responsibility for production, rural production methods have changed from production teams being the administrative units to fixing output quotas on the basis of individuals, teams, or households, and the situation is much more complex than formerly. This requires all the more that we intensify planning guidance and carry out repeated indoctrination of the peasants in overall concepts so that peasants will voluntarily place production under the guidance of the state plan, and plant in accordance with the state plan. In the case of the procurement and transfer of agricultural sideline products, plans must be carried out; there positively can be no doing as one pleases, or planting whatever will make money. Only in this way can agricultural production be really increased.

In the readjustment of agricultural crop patterns, it is also necessary to keep the eyes on proportional readjustments within agriculture as a whole, i.e. the readjustment of farming, forestry, livestock raising, sideline occupations, and fisheries. Particularly inasmuch as the proportions within the planting industry are tending toward a situation of equitability, henceforth, the focus of readjustment should all the more be shifted toward forestry, livestock raising, sideline occupations and fisheries to avoid going from the sole farming of grain crops in the past to the solve farming of economic crops now. In some places today instances have occured in which forests were destroyed, mulberry destroyed, or vegetables destroyed in order to grow cotton, resulting in a decline in the aquatic breeding industry and a rise in the prices of vegetables. This is bad for all around development of the economy, bad for the livelihood of the people, and should be given attention and solution.

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CSO: 4007/220

BRIEFS

JILIN FARMS' ACHIEVEMENTS--Agricultural reclamation farms throughout Jilin Province reaped good harvests in various undertakings in 1981. Their grain and soybean output surpassed the 1980 figure by 4.2 percent and industrial and agricultural output value reached 129 million yuan, a 14 percent increase over the 1980 figure. They earned 10 million yuan of net profits. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 14 Mar 82 SK]

CSO: 4007/363

NEW EMPHASIS PLACED ON HOG PRODUCTION

Chaoyang Prefecture Overfulfills 1981 Quotas

Shenyang LIAONING RIBAO in Chinese 1 Feb 82 p 1

[Text] In Chaoyang Prefecture, which has sustained severe natural calamities, the broad masses of commune members have eagerly sold live hogs out of high regard for the welfare of the country. As of the end of 1981, the prefecture's live hog sales had exceeded plan by 46 percent, and during the first 10 days of 1982, the prefecture provided an additional 10,800 hogs, amounting to 90 percent of the January quota.

In the wake of the natural calamities that Chaoyang Prefecture sustained last year, great hardships were caused for production and commune members' livelihood throughout the prefecture. While organizing leaders to launch self-help in production, the Prefecture CCP Committee and government administrative offices rallied the people of the prefecture ot "link hog raising to disaster rescue, and vigorously launch hog raising endeavors to make a greater contribution to the country." They also decided that policies for developing live hog output would not change, that award sales methods would not change, and tha procurement levels would not change. The broad masses of commune members responded to the call from the Prefecture CCP Committee and government administrative offices. They surmounted all sorts of difficulties to develop hog raising, to support the country, and to supply meat markets.

In order to hasten the pace of live hog sales, all counties enhanced their sllaughtering capabilities, and food procurement stations changed their procurement methods accepting hogs from all who had them to sell. Railroad transportation units also took the initiative to join in and make timely deliveries.

Further Development of Hog Raising Enterprises

Shenyang LIAONING RIBAO in Chinese 1 Feb 82 p 1

[Text] In order to provide for the meat markets in Liaoning Province, it is necessary to preserve in a predominantly planned economy for further development of hog raising enterprises, and correspondingly to do a good job of hog sales and hog procurement work.

Despite the 2 consecutive years of natural calamities that Chaoyang Prefecture has sustained, it has not only developed hog raising enterprises, but has also persevered in priority sales to the state of fattened hogs. This spirit of understanding of the overall situation, concern for the totality, and not seeking after niggling advantage but rather oneself sustaining hardships in order to share the country's burdens deserves greatly to be carried forward. If all prefectures were to do as Chaoyang Prefecture has done, this year it would be possible to buy up an additional 100,000 head of hogs throughout the province.

The ratio of industrialization in Liaoning Province is heavy; urban population is large; purchasing power is high; and requirements for non-staple foods, particularly for meat, vegetables, and eggs, not only means large quantities, but also ever increasingly high quality. Providing for the province's markets requires adherence to a primarily planned economy, and adherence to placing commodity foods in an important position. This is a major guiding mentality in providing for markets. However, as market supply has made a pronounced turn for the better during the past 2 years, and as the people's livelihood has seen preliminary improvement, some places and some comrades have ignored commodity food. Following use of the market to effect supplemental regulation, the concept of an economy that is primarily a planned one began to become diluted, leading to the situation in which markets currently urgently need increased amounts of pork, but sources of supply are inadequate. Some hog dealers and illegal butchers have seized the opportunity to act, and have even formed gangs to go into rural areas to buy up hogs at high prices, privately slaughter them, and sell them at high prices. The experience of history has shown that as the main channel for circulation of commodities, state-owned businesses must take control over an overwhelming majority of the sources of major commodities if they are to regulate the overall situation. Rural cadres and commune members have to be indoctrinated in love of country and love of socialism so as to consciously sell their live hogs to the state. State allocated plans must certainly be fulfilled. There can be no holding back and making delivery of less, or no holding back now and delivering later in petty calculation of the interests of a local prefecture or a local unit alone. Policies helpful to development of live hog production and a good job of procurement should be stabilized. Several methods and measures that communes and brigades have themselves devised to encourage the raising and selling to the state of hogs should also not be lightly cancelled or changed. Speculative and racketerring activities are to be attacked; hog dealers and illegal butchers should be resolutely suppressed; and market controls should be strengthened, with strict prohibition of the jacking up of pork prices. The broad masses of peasants love the country and love socialism. With a strengthening of leadership, alighment of policies, vigorous measures, and fair methods, it will be entirely possible to attain new development of hog production and further supplies to meat market this year.

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CSO: 4007/226

SHENYANG SUBURBAN VEGETABLE GROWING AREA INCREASED

Shenyang LIAONING RIBAO in Chinese 2 Feb 82 p 1

[Article by Correspondent Yu Ming [0060 2494]: "Good Job of Vegetable Production to Assure Market Supplies. Shenyang Municipality Resolutely Carries Out Program of Vegetables Formost in Close-in Suburbs. Further Perfection of Systems of Responsibility for Agricultural Production; Implementation of Production and Marketing Policies; Good Job of Scientific Farming; Acceleration of Building of Vegetable Fields in Medium Distant Suburbs"]

[Text] The Shenyang Municipal CCP Committee and the municipal government have resolutely implemented a policy making vegetable production foremost in close-in suburbs. They have done a better job of vegetable production to assure market supplies.

This year Shenyang Municipality has required that sufficient quantities, good quality, diverse varieties, and balanced supplies of vegetables be produced. The area of the vegetable production base is an invariable 240,000 mu of which 204,000 mu is farmed (the remainder being reserve vegetable fields), with a planned output totaling 1.5 billion jin, for an average annual per capita production of 520 jin of vegetables, or a daily consumption of 1.42 jin. In setting up this year's production plans, the principle of "basing output on demand, output greater than sales" was followed. The area sown to spring vegetables was increased by 5,000 mu, yields per unit of area were increased, and quantity of supplies was increased. Sowing of summer and late summer vegetables was separately arranged with a good matching of varieties to solve problems of balanced supply. For autumn vegetables, the area was maintained stable, but care was intensified to assure a bumper harvest.

In order to assure accomplishment of the aforementioned tasks, the Shenyang Municipal CCP Committee and Municipal Government convened a vegetable work conference at the beginning of the year, which put forward five specific actions to be taken as follows: First was resolute adherence to a program of making vegetables foremost in the agricultural production of close-in suburbs, handling well the relationship among vegetable production, industrial sideline industries, and grain and economic crop production, to resolutely place vegetable production in first place; to assure sufficient manpower for the front line of vegetable production, making sure that equal pay will be received for equal work whether in growing vegetables or working in industry;

a certain amount of profits from commune and brigade industrial sideline occupations is annually to be allocated for the building of vegetable fields. Second is further strengthening and perfection of systems of responsibility for production, with unified administration, specialized contracting, and linking calculation of remuneration to output being advocated in the case of old vegetable teams in close-in suburbs that have a good economic foundation, and numerous farming projects. Teams in which production has not risen for a long time, and where life is hard for commune members and accumulations extremely scant, unified management, contracting work tasks to individual households, independent farming, and sole responsibility for profits and losses may be practived. For skilled hands possessing special talents in production techniques, it was recommended that specialized contracting of vegetables be done under unified management. Third was good implementation of production and marketing policies, adherence to planned production, planned deliveries to market, and monopoly purchase and marketing of grain. Grain departments are to assure supplies of consumption grain for vegetable farmers, and vegetable stations are to assure procurement on the basis of list prices and in accordance with contracts. Vegetable growing communes and brigades are to assure sufficient growing area, assure deliveries to market on time of certain quantities, assure quality of vegetables, assure variety, and steadily increase the amounts of commodity vegetables. Vegetable stations and production teams are to sign contracts in accordance with state plan. Communes and brigades must sell to vegetable stations all vegetables grown on contract; they may not dispose of them themselves or market them themselves. Vegetable stations should buy all available in overfulfillment of quotas, and they may not refuse to accept them. Fourth is a good job of scientific farming using every possible way of to do a good job of early spring vegetable production, while at the same time actively promoting extension of the reserve land production area, increasing ground cover varieties and such measures for increasing yields. Fifth is acceleration of the building of vegetable fields in medium distant suburbs, allocating 4 million yuan from this year's new vegetable field construction funds and concentrating their use in the two vegetable field areas of Dongling and Yuhong for the sinking of 200 new vegetable field wells, the building of 150 mu of hothouses for growing seedlings and 20,000 arched matsheds, and the building of 5,000 square meters of vegetable storage cellars. This is the first time in recent years that Shenyang Municipality has invested so much funds in the building of vegetable fields in the medium distant suburbs.

In response to a call from teh Municipal CCP Committee and the municipal government, vegetable growing brigade and commune cadres and the masses in the suburbs are now in process of putting into effect specific measures to do a good job of vegetable production. In 1981, the municipality erected [illegible],000 mu of windbreaks for early spring vegetables, and this year the amount rises to 46,700 mu. Plastic sheet mulch has increased from 1981's 8,000 mu to 10,900 mu. Large, medium and small matsheds have increased from last year's 11,000 to 14,000. All the materials needed for the city's vegetable production have been entirely made ready, and now the broad masses of vegetable growing peasants are in the midst of furious preparations for plowing and production, early spring vegetables such as broccoli, have already been started, and early cucumber varieties are about to be set out in the fields.

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CSO: 4007/226

BRIEFS

ANTIDROUGHT MEETING--The Liaoning Provincial CCP Committee and government recently held an emergency meeting urging all people to combat drought to ensure spring farming. The meeting disclosed that there has been little rainfall since 1981, and the drought situation is worsening. It urged all party committees and governments to devise and implement antidrought measures and urban citizens to save water to support farming. [SK032212 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 2 Mar 82]

CSO: 4007/363

NEI MONGGOL

BRIEFS

AFFORESTATION--The Naiman Banner CCP Committee and Government have earnestly summed up historical lessons and experience, rationally readjusted production policies and mobilized people throughout the Banner to prevent soil from becoming sandy. Naiman is one of the Banners in the central part of the region which have suffered from serious desertification. Some 6 million mu land, or half of the total area, in the Banner have become sandy. Until a few years ago, the area that became sandy had increased by 40,000 mu annually. In recent years, the Banner CCP Committee and Governemnt have conducted many investigations and concluded that they must develop forests to stop desertification. They decided to harness 400,000 mu of sandy land every year beginning in 1980 and to complete harnessing 4 million mu of sandy land by 1990. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 18 Mar 82 SK]

LAMBS UP--The current animal husbandry situation in Nei Monggol is excellent. By mid-March, the region had delivered 4,274,000 lambs, 1.68 million more than the corresponding 1981 period. The lamb survival rate was 92.1 percent, 3.8 percent higher than in the corresponding 1981 period. From last July till now, the survival rate of young and mature animals is 99.3 percent, 0.7 percent higher than in the previous corresponding period. The number of dead young and mature animals was 255,000 head less. [SK111141 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 Apr 82]

NEI MONGGOL DEVELOPMENT — In 1981, Ulanchap League in Nei Monggol sustained multiple disasters, but the "double protection" system of responsibility showed its mettle. Despite reductions in the area sown to grain in the league, total output was still 43 percent higher than in 1980. Fifty-one and nine-tenths percent of production teams removed the stigma of many years of eating grain sold back to them by the state, and 52.9 percent of production teams overfulfilled their quotas for grain sales to the state. Incomplete statistics show that 1,050 households in the league had grain outputs of 10,000 jin, and 10,167 households had incomes of more than 1,000 yuan. Shuiquan Production Team in Yuanshanzi Commune, Chayou Center Banner had over the years accumulated debts averaging 210 yuan per capita, and was the banner's notorious "three dependencies team." In 1981, it suddenly turned over a new leaf, per capita earnings amounting to 374 yuan. After peasant earnings everywhere increased, numerous livestock sheds and enclosures were required and large numbers of draft animals and farm equipment were purchased. Rural cadres said that the second high tide of production since cooperativization of agriculture was now occuring. [Text] [Beijing ZHONGGUO NONGMIN BAO in Chinese 7 Feb 82 p 2] 9432

NEWBORN LAMB SURVIVAL RATE--According to incomplete statistics, by 18 January 1982 Nei Monggol Autonomous Region had delivered 1.02 million live winter lambs. Of these, the survival rate was 93 percent, 2.4 percent higher than the same period in 1981. Delivery of live lambs increased by 215,000 over last year. [Text] [Beijing RENMIN RIBAO in Chinese 6 Feb 82 p 1] 6248

CSO: 4007/236

BRIEFS

AFFORESTATION--At the Qinghai Provincial meeting of representatives of units and individuals advanced in afforestation, (Chen Hong), deputy chief of the Three-Norths Shelterbelt Construction Bureau under the Ministry of Forestry, advanced three suggestions on promoting the province's forestry. They are: 1) turn the agricultural area in the eastern part of the province into a key forestry base and develop a forest network in farmland. Where conditions permit, efforts should be made to develop fuel and economic forests and orchards. 2) Strive to improve economic efficiency by introducing contract and other systems. 3) Protect existing forests and stop reckless deforestation. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 16 Mar 82 SK]

SNOW DISASTER--There were snowfalls in Qinghai Province's Huangan Tibetan Autonomous Prefecture on 30 March and on 2 and 8 April. The losses caused by these snowfalls were serious. The prefectural authority has decided to allocate 300,000 jin of fodder and 7,000 yuan of disaster-relief funds to help the people in these areas weather the disaster. In addition, the Qinghai provincial authority has granted 100,000 yuan and 360,000 jin of fodder to these areas. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 9 Apr 82 SK]

CSO: 4007/363

BRIEFS

COMMUNE, BRIGADE ENTERPRISES--According to the statistics revealed at the recent conference held by the provincial commune and brigade enterprise bureau on its annual report, by the end of last year, the total output value of the commune and brigade enterprises throughout Shaanxi Province reached some 962 million yuan and the commune and brigade enterprises overfulfilled their production quotas for 1981 by some 10 million yuan. The total output value in 1981 was 3.1 percent more than in 1980. The total income of Baoji Municipality's commune and brigade enterprises last year was the highest ever and the municipality's commune and brigade enterprises overfulfilled their production quotas for 1981 by 8.8 million yuan. Despite serious floods, Hanzhong Prefecture's commune and brigade enterprises still overfulfilled their production quotas for 1981. Since the beginning of this year, commune and brigade enterprise departments at all levels in the province have done well in grasping production for the first quarter and have meanwhile straightened out enterprises. Commune and brigade enterprises in many places now have a new outlook. [HK301349 Xian Shaanxi Provincial Service in Mandarin 2300 GMT 26 Mar 82]

FARMLAND CONSTRUCTION--Last winter, Shaanxi Province promoted its farmland and water conservation construction, which had dropped in the past. According to the statistics compiled by the relevant departments, the province has increased its irrigated areas by some 100,000 mu, leveled 310,000 mu of land and built 100,000 mu of farmland with guaranteed harvest irrespective of drought and gloods. [HK171441 Xian Shaanxi Provincial Service in Mandarin 1130 GMT 15 Feb 82]

CSO: 4007/363

SHANDONG

INDUSTRIAL SIDELINE PRODUCTION CUTS LABOR SURPLUS, INCREASES EARNINGS

Beijing ZHONGGUO NONGMIN BAO in Chinese 7 Feb 82 p 2

[Article by Ning Yunjiu [1380 0061 0036] and Xiao Lian [5618 4539 1344]: "Weihai Municipality Vigorously Supports Rural Development of Industrial Sideline Occupations, Provides For Surplus Labor and Increases Economic Benefits"]

[Text] Weihai Municipality in Shandong has vigorously supported rural development of industrial sideline occupation production to solve the problem of labor surplus. In 1981, 65 percent of the city's rural workforce was engaged in industrial sideline occupation production, and earnings from commune and brigade industrial sideline occupations accounted for more than 76 percent of total earnings. Each rural resident in the municipality averaged earnings of 298 yuan.

They took three actions. First, insofar as possible, products and parts processing for industrial plants belonging to the municipality were placed in rural villages. Communes and brigades organized personnel to do the processing, and the industrial plants were responsible for technical direction and heandling, to form specialized production in which the city and the countryside were linked in an integrated whole. The rural villages in the municipality set up more than 280 processing points in which more than 28,000 commune members engaged in processing of municipal industrial products, annually earning a total of more than 19 million yuan. Second, some enterprises were turned over for operation to communes and brigades possessing sufficient process raw materials and a certain amount of management experience, the communes and brigades returning funds for the equipment incrementally over a period of time. Third, communes and brigades walked a common path whereby "mother plants" carried "sibling plants," and commune plants carried brigade plants to help economically backward poor brigades develop industrial sideline occupation production. Through the aforementioned measures, Weihai Municipality has come to operate 448 commune and brigade industrial sideline occupations and other economically diversified projects, both providing for surplus owrkforces and raising the standard of living of commune members. Annual per capita earnings distributed in the city are 298 yuan. Ninety-four percent of producion brigades practice a system of labor insurance and retirement, and children incur no expense from the time they enter day-care centers until graduation from primary school.

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CSO: 4007/228

SHANDONG

PRODUCTION OF SMALL FARM MACHINES INCREASING

Beijing RENMIN RIBAO in Chinese 30 Jan 82 p 2

[Article by Correspondent Lin Qixiang [2651 0366 4382]: "Active Production of Good Quality Low Priced Small Farm Machine Products; Shandong Farm Machinery Sector in Keeping With Characteristics of the Province"]

[Text] Shandong Province's farm machinery sector is actively arranging for the production of small farm machines and implements, and large quantities of good quality, low priced farm machines will be supplied in an endless stream to rural villages.

The province's farm machinery sector sent people in advance to the prefectures of Yantai, Linyi, Jining, Heze, Dezhou, and Liaocheng to conduct a survey of farm machinery sales. They discovered that development of agriculture and of economic diversification had brought a set of new changes to the farm machinery market. Most rural areas had changed from fairly serious attention to large and medium size farm machines to an urgent need to buy small multi-purpose farm machines and implements, and many peasants had put forward a requirement of "wanting smallness first, wanting quality second, and wanting to spend little money third. They realized as a result of the survey that during the past 2 years peasant purchasing power had increased very greatly and that they were able to buy more small farm machines and implements. At the same time, they got an understanding of rural needs for quantity, variety, and meeting specifications in farm machinery.

In order to produce small farm machines and implements of good quality for a low price, it was necessary to select fairly advanced farm machine enterprises at fixed points for specialized cooperation in large scale production. The 195 model small diesel engine produced by the Laiyang Power Machine Plant was of good quality, but supply could not meet demand. The provincial farm machinery sector decided to help this plant rennovate its equipment and carry out technical improvements. At the same time, they organized the Weifang Engine Plant, the Beizhen Diesel Engine Plant, and the Yiyuan Diesel Engine Plant to produce the same product, increasing output of these small diesel engines from 43,000 to 62,000 per year. They also used the same method for another briskly selling name brand product, the Taishan 12 horsepower foru wheeled tractor, and hand tractors much in demand in rural villages, tapping potential in existing farm machine enterprises to expand output.

In arranging for production, they sought to have small size farm machine products meet demands and avoid blindness. Shandong has had a drought for several years in a row, and peasant demand for drainage and irrigation machines is especially urgent. The spray irrigation machines produced by the Feicheng Spray Irrigation Machine Plant and the Dongming Farm Machine Building and Repair Plant have been well received, at the farm machine sector planned to produce 3,000 such spray irrigation units during the year. Shandong's cotton and peanut production has developed fairly rapidly, and the demand is very great for small cotton processing machines, peanut dibbling machines, peanut digging and harvesting machines, picking machines, and shelling machines. In order to satisfy peasant demand, production has been arranged at fixed points.

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BRIEFS

FARM MACHINERY SUPPLIES--Shandong Province's farm machinery supplies this spring are the best in recent years. The total sales volume has reached 129.6 million yuan so far, an increase of 66.6 percent over last spring. The province has supplied to rural areas 4,360 tractors totaling 122,000 horsepower, 12,800 drainage and irrigation machines totaling 184,000 horsepower and 22,400 auxiliary machines and tools. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 15 Mar 82 SK]

WHEAT IRRIGATION--As of 8 March, Yanzhou County, Shandong Province, irrigated some 200,000 mu of wheatfields and applied fertilizer on 180,000 mu of wheatfields. [SK191351 Jin Shandong Provincial Service in Mandarin 2300 GMT 13 Mar 82]

OIL-BEARING CROPS PROCUREMENT--By 20 January, Shandong Province had overfulfilled the 1981 purchasing tasks for three oil-bearing crops. The province purchased 817 million jin of peanuts and 16 million jin of sesame, overfulfilling the purchasing plan by 2 and 24 percent, respectively. Some 103 million jin of cotton seed were purchased, up 250 percent over the corresponding 1981 period. [SK291309 Jinan Shandong Provincial Service in Mandarin 2300 GMT 28 Jan 82]

PLANTS WHEAT--Jining Prefecture, Shandong Province, cultivated 4.05 million mu of wheat this year. Because of protracted drought, the number of wheat seedlings planted on every mu of wheat fields is 80,000 less than in previous years. Moreover, the seedlings have not been growing well. Mindful of wheat growth, the prefecture has since the Spring Festival organized over 6,000 cadres at prefectural, county and commune levels to go to the grassroots to vigorously attend to wheat field management along with agrotechnicians. [SK250620 Jinan Shandong Provincial Service in Mandarin 2300 GMT 22 Mar 82]

WHEAT FIELD--Some 65,000 mu of Wucheng County's 240,000 mu wheat seedlings have been classified as third grade seedlings due to a serious drought. After concerted efforts by this county, 38,000 mu of poorly developed wheat seedlings have been upgraded to first or second grade. Wheat field management is in full swing. [SK251109 Jinan Shandong Provincial Mandarin 2300 GMT 24 Mar 82]

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PARTY SECRETARY INSPECTS COMMUNES

HK070534 Taiyuan Shanxi Provincial Service in Mandarin 2300 GMT 4 Apr 82

[Summary] "From 18 to 21 March, Provinical Party Secretary Wang Tingdong went went deep into the midst of the four representative communes of Beiping, Reliu, Shiti and Puxian in Gu County to carry out intensive investigations and pay visits. He listened to briefings by several commune and brigade secretaries, some commune members and the relevant departments. He pointed out emphatically that we must elevate the position of household sideline occupations. We must persist in taking household sideline occupations as something important."

Economic conditions vary greatly in Gu County. Thus household sideline occupations must be developed with this in mind. Full play must be given to superior features.

Beiping commune was formerly the most poverty-stricken commune in Gu County. Since the 3d plenary session of the 11th CCP Central Committee, the commune has exploited its rich natural resources and adopted the guideline calling for collective and individual undertakings to move forward at the same time. All total 19 projects and 67 enterprises have been built. Last year, total income reached over 1.5 million yuan. The commune members energetically devoted themselves to growing aquatic plants and planting and harvesting crops, to service trades and other household sideline occupations. Income therefrom reached 500,000 yuan. Over 50 percent of the households of the commune earned incomes exceeding 1,000 yuan from household sideline occupations. There were 3 households which earned over 10,000 yuan as their share of income from collective distribution and from individual household sideline occupations. Commune members built over 4,400 new housing units. The money spent on daily-use articles and luxuries was equivalent to the total amount spent in the 30 years since the founding of the PRC.

"In the past, some comrades held that the role of commune members' household sideline occupations should not be overemphasized. Some also believed that since income from household sideline occupations account for more than commune members' share of income from collective distribution, the superior features of the collective economy could not be brought into play. Therefore, they were not keen on giving guidance and were too rigid in their approach.

"In fact, in areas where there is a shortage of resources and where the collective economy is relatively backward, commune members' household sideline occupations represent not only a supplement and a contribution to the collective economy but also a necessary supplement to the socialist economy. They are an important component of the rural economy. They provide a good way for commune members to arrive at prosperity.

CSO: 4007/363

SHANXI

NEW ORGANIZATION TO GUIDE AGRICULTURAL MODERNIZATION PROPOSED

Tianjin KEXUEXUE [SCIENOLOGY] in Chinese No 5, 20 Oct 81 pp 27-31

[Article by Zhang Qinwen [1728 3084 2494], Shanxi Provincial Agricultural Zoning Office: "Agronomy--A Science to Guide the Modernization of Agriculture"]

[Text] Military science as a science to guide the waging of warfare has a long history that has developed swiftly and violently. The discovery during World War II that some problems in military command could be transformed into mathematical relationships for accurate solution brought about the development of operations research and the establishment of a body of effective engineering methods, namely military systems engineering. The lack of comprehensive systematic analysis and study and the lack of scientific data for the numerous decisions for the development of China's agriculture, the virtual stagnation in a state of antiquated techniques, and the off-the-top-of-the-head reckoning done by a small number of people has caused numerous mistakes. This is very incompatible with requirements for hastening building of the "four modernizations." Farsighted and sagacious actions will have to be taken to make up for this failing, and the study and borrowing of experiences in the military field in this regard will also be necessary. This article attempts to draw on military science to make a preliminary exploration of the science for guiding policies in the modernization of agriculture--agronomy.

We believe that the various laws studied in both military science and agronomy have three characteristics in common, namely their totality, their adaptability, and their orderliness.

Totality--From Individual Parts to Assembly

The similarity in nature of agronomy to military science is that guidance of agricultural production also requires that consideration be given numerous individual links. Parts making up the body of the agricultural production system are farming, forestry, animal husbandry, the poultry industry, fisheries, insect industry [5722 2814] [presumably sericulture and beekeeping], micro-organism industries, sideline occupations and commune and brigade industries. Agricultural production entails a series of tasks including construction of land, improvement of soil, fertilization, water conservancy, propagation of superior varieties, plant protection, field management, agricultural mechanization, planting of trees and grass, and protection against erosion. Guidance of agricultural production also entails consideration to numerous factors related to production such as natural resources, regional differences, climatic changes, farming seasons, biological characteristics and administration and management. All these links are the individual parts, which can become an agricultural production "machine" only after being assembled into a structure for the guidance of agricultural production. The various agricultural crops, forest trees, livestock, farm implements and all fields of agricultural science and technology represent latent productivity. Only through coordinated assembly by the agricultural production guidance mechanism and the starting up of this agricultural production machine can this latent productivity be transformed into actual productivity. Agronomy is the study of how to assemble the machine of agricultural production. If this machine is to be well assembled, the individual parts must possess three conditions.

1. Completeness. All the individual parts are indispensable to complete the machine. If one is missing, the machine will not work. Agricultural production requires that a whole series of actions be taken. If any of these actions is ignored, production cannot be increased; if certain actions are one-sidedly emphasized, it will also be difficult for production to develop. For a long time, the study of agricultural science has been all individual parts, all fields of agricultural science emphasizing courses on individual parts. Generally it has been parts for parts sake, with no attention given to the relationship among parts and no attention given to the relationship between the parts and the whole machine. All the vocational components in the agricultural system--farming, forestry, livestock raising, water conservancy, meteorology and farm machinery--have also been concerned with the parts. Agricultural commissions, which should properly be concerned about the whole machine, have basically not been doing their job; they have simply been doing nothing more than managing more individual parts instead of giving attention to how the machine is put together. Because of the lack of coordination, a serious situation of everyone being a law unto himself exists. Those involved in grain production emphasize "taking grain as the key link"; those in the forestry industry proclaim ecological balance; those in water conservancy stress the lifeblood of water; and those involved in farm mechanization take the road of a fundamental solution. If they do not plump for placing their own specialty in the commanding position, they raise the specialty in which they are engaged to an extreme degree. Clearly this is wrong. Reliance on several parts will not permit construction of a fine operating machine. If each vocational sector works in isolation, it will be impossible to bring about all around bumper results in agricultural production. Agricultural production is a totality, and a science requiring that individual parts be assembled into a machine. Agronomy is the science that studies the design principles, the structural methods and the assembly skills for this machine; it is the science of the overall mechanism in the study of all disciplines in agricultural science.

2. Compatibility. To assemble parts into a machine requires coherence; otherwise the machine will not be correctly assembled. The structure of production in the various fields of farming, forestry and livestock raising,

and the various measures required for development of agriculture must help each other along, be dovetailed and be complementary to strengthen people's control over the production process. If there are mutual contradictions, mutual disjointedness, and mutual cancellation, people's control over the production process will be weakened. Formerly we did not strive for compatibility of parts, which is to say that some production held an overwhelming sway, and some production projects were just sandwiched in, or obliterated. Some actions were pushed with very great zeal while some projects were pushed with no vigor at all, resulting in a proportional imbalance within agriculture, and an extremely inequitable economic structure, technical structure, investment structure and land utilization structure whereby production was unable to achieve all around development. This state of affairs must be changed. Unless individual parts form a coherent whole a machine that meets specifications cannot be assembled. Agronomy will study the problem of compatibility among these machine parts, that is to say the proper proportions of each part of production, and the proper matching of individual technical measures.

3. Consistency. When examination on the basis of certain measuring criteria is done of the machine formed from individual parts, it must meet or at least approximate standards of quantity, quality and performance, and present state of consistency. This is to say that when judged in terms of standards required of every part in relationship to the whole, actual standards a attained by individual parts will be regular. A machine constructed in this way will be able to operate with the highest degree of performance. The series of actions taken in agricultural production require that the technical level of individual actions be virtually the same and compatible, so that agricultural production can hope to develop fairly rapidly. Otherwise, development of production will be held in check by the weakest link. For example, when organic content of soil is only 0.5, if organic fertilizer is lacking, no matter advanced measures used such as superior varieties, spray irrigation, or large applications of chemical fertilizer, raising of output will be difficult. That is because the factor of impoverished soil is at a particularly low level relative to other factors. Only by greatly increasing applications of organic fertilizer to increase soil fertility making this factor similar to and compatible with other factors, can outputs be greatly increased.

For a long time our blindness has been very great in the spread of agricultural science and technology. For some links, scientific study has advanced rapidly and the level of spread to application has been fairly high; but for some links, no one has inquired into the laws, and levels of application have been very low. Some so-called new techniques not urgently needed in production at the present time have been vigorously promoted, but they have not been accepted by the masses, and a lot of manpower and material resources have been wasted. Scientific and technical units and agricultural units concern about why so many new scientific and technical achievements have been so hard to promote may be attributed, I believe, not only to policies but mostly to neglect of the overall balance of technical factors. Some technical levels are low, making them disadvantageous while other technical levels are high, making them advantageous. Vigorous promotion of new technical achievements that are already advanced and in an advantageous position is not something that is urgently needed for development of production. Agronomy needs to study balance among technical factors in agriculture. That is to say it has to analyze imbalanced states among individual parts and centralize forces to come to grips with the things that are disadvantageous, taking in hand the backward technical factors to bring them up to balance.

In the agricultural system, integral parts, pertinent factors and methods, and the diversity and complexity of techniques are similar to the military field. The requirement to proceed from the total situation, closely coordinating the parts to attain optimum results for the total situation possesses urgent significance. A difference is that in the study of military affairs, two parties are antagonistic requiring use of games theory, while in agricultural production we meddle with nature and nature will take revenge on us. However, this revenge is not a purposely regulated counterattack by nature, but is usually a penalty we pay for violating the laws of nature. Therefore, agronomy has to study how better to do things in accordance with natural laws and economic laws for high-speed development of agricultural production.

Compatibility--From a Single Ingredient to a Whole Prescription

In the foregoing we compared each unit in the corpus of the agricultural system, each individual task and all pertinent elements to individual parts, and likened agronomy to a whole machine. We did this in order to emphasize the totality and comprehensiveness of the discipline. In actual agricultural production, however, not every region uses all the parts in agricultural production. The mass of parts are only parts held in readiness. But agricultural production in each individual area has to choose, on the basis of actual circumstances, the parts that are suitable to assemble a machine with specified performance. Following this train of thought, it is necessary to set up the following dialectic view: the most economically effective technique for parts. This is somewhat the same as the applied technology concepts that have aroused such widespread discussion within the country, but it is not entirely identical.

Agronomy should learn from the principles of preparing prescriptions in Chinese medicine. From among several hundred ingredients in Chinese medicine, several or 10 plus or 20 ingredients may be used in a single prescription. Likewise, when a region develops agriculture, it need not overdo the concentration of agricultural science and technology. Naturally, the links involved may be more numerous than the ingredients in a Chinese medicine prescription. In that case, how should such agricultural science and technology disciplines as numerous as this be regarded? And how are new fruits of research to be regarded? We say that just as in the case of the ingredients in Chinese medicine, all the individual techniques of agricultural science are on hand for use and are indispensable. An agricultural research unit is actually like a part ready for use in a machine or an herb to be used in a prescription. Every new technique, new measure, new agricultural technology or new equipment for agricultural production provides a fine weapon that may be used for the development of agriculture. Just as when a new fine herb with outstanding curative powers is added to the pharmacopeia of Chinese medicine, it will find greatest use in the make-up of a prescription whenever it is needed. However, Chinese physicians will not promiscuously use new herbs on this account. They will use dialectical theory in healing and absolutely not follow a craze. In agriculutral production, instances are fairly numerous in which a new technology currently in vogue was blindly and promiscuously used. Sometimes a high price was paid for miniscule achievements and very poor economic results, yet promotion for use of these new scientific and technical accomplishments was paraded around with great fanfare. Apart from questions of thinking style, one has to say that such actions were also related to a lack of a scientific guiding mentality.

In Chinese medical prescriptions, each kind of herb has a specific use. The so-called sovereign, minister, viceroy and envoy in Chinese prescriptions mean the main medicine, the supplemental medicine, the auxiliary medicine and the blending medicine, the compatibility of which is very strict. This is a surpassing masterpiece in China's history of science and technology for the solution of fixed and quantitative systems problems. When we engage in agricultural production, the measures adopted in a specified place at a certain time must not only employ proper techniques, but also employ certain quantities of each technique. Without a fixed quantity and no clear conception of which of the measures used is most important, second in importance, or of general applicability is like taking a prescription with no prescribed dosage. The illness will not be cured. If the dosage is not right, the medicine will not be suited to the illness. As to how to solve these quantitative questions, further research is required.

Sequence--From Hardware to Software

Both warfare and the agricultural production processes are processes in which time cannot be reversed. That is because both warfare and agricultural production are kinds of actions, and matters that are on-going. Therefore, it is necessary to go along with time and sequentially continue development right up until the conclusion of a stage in a process, and then to begin a new stage.

The agricultural production process and the warfare process are likewise like a performance by a symphony orchestra in which each player, acting under most effective direction, plays at particular times to produce a movement that is melodious and pleasing to the ears. Were the sequence of playing to be inverted, what would that be like? When we run the music in a motion picture backward, we hear a strange and curious cacophony.

With the development of science to the present age, not only does operations research have to study the logic behind different things and different processes in order to seek out the optimum sequences accompanying the times, but in this study time's irreversible process enters the field of physics. For time immemorial, physics has studied only reversible processes. All the physical laws are reversible in time, but the second law of thermodynamics uses the principle of entropy increase to introduce into physics concepts of evolution, turning the study of physics from an "existing physics" in which time is reversible into the study of a "change physics" in which time is irreversible. The renowned Belgian physicist, Professor Puligaojin [phonetic] made the irreversibility of time the starting point for his theoretical research, and through observation of systematic historical changes created the "dissipative structure" theory, which holds that whenever any nonclosed system that is formed out of a state of equilibrium meets certain conditions in the outer environment, through constant exchange of energy and materials with the outer world, the system can change from its original disorderly state into an orderly state in time, in space and in function. This provides for us a theoretical basis for understanding, in a total sense, order problems in numerous systems.

The agricultural production system is also a nonclosed open system that includes the large-scale agricultural production sectors of farming, forestry, animal-husbandry, poultry raising, fisheries, insect industries, micro-organisms, sideline occupations and industries. The system as a whole has a transportation of energy out of it and into it, and a material exchange with the outside environment and each of the units within the system in a process of circular use. Consequently, it is also a "dissipative structure," and it also changes from a disorderly state into an orderly state in time, in space and in function. In the agricultural development process, a definite objective sequence exists in what every sector and link first produces as a product that later produces a material, and in what operations are done first and what items are done later. Therefore each bit of production must rely on still another bit of production to provide a certain material or to create certain conditions, and provides, in turn, through its own functioning material for or conditions for further production. In the agricultural production process, it is only through maintenance of the orderly state of this energy flow and material flow to improve the utilization effect of the material cycle that the goal of high yields and high benefits can be attained.

Formerly in agricultural production, a conception of sequence existed only for the growth and development of farm crops and for poultry and livestock, while sequences pertaining to the evolution of the agricultural system as a whole including the sequence of relationships among individual links in the agricultural system, the sequence of restructuring and upgrading of agricultural techniques and the sequence of capital construction in agriculture had not yet been studied as laws. This gap requires filling. We must study and master these laws of sequence to formulate sequences compatible with laws for high-speed development of agriculture. If the system of agricultural production is likened to an electronic computer system, the individual links in agricultural production that we likened in the foregoing to individual parts and to ingredients in Chinese medicine are the "hardware," and how to assemble machines, how to make up a prescription for Chinese medicine, the sequence of computer operations, and the sequence of development of agricultural production are all the "software." All computers must depend, at the outset, on the human cerebrum and operate on scientific logical thought to routinize and symbolize to produce programs, and to formulate the order of calculations, their hardware only them coming into play. The same computer, if programmed differently, can play different roles. The more scientific and the more marvelous a person's logical thought, the better able a computer is to manifest man's thought capacity. This shows that in guiding the agricultural production process, the more marvelous the programming, the better all the various science and technology that is the hardware can advance development of production. Conversely if the programming is stupid or not in accordance with laws, the various science and technology that makes up the hardware will not be able to play any function. The key lies in skillful use of the "software."

Soft Sciences, Staff Organizations and Elementary Braintrusts

To summarize the foregoing, in a broad sense, agronomy and military science are the same in that they encompass two categories of research. The military studies weapons and armaments, and military techniques and methods, while agriculture studies crops, soils, fertilizers, farm machines and pesticides. These studies of "things" are "hard science." The military also studies deployments and movements of troop strength, operational command in warfare and it studies the laws that guide war, while agriculture studies production aggregates, selection and matching of techniques and programming, and it studies the laws guiding agricultural production. These studies of "events" are "soft science." Narrowly defined, agronomy means the science of the laws guiding agricultural production.

Objects are always linked to each other, and the science of the study of "events" and the study of "things" is also linked. "Hardware" and "software" are inseparable. Modernization of agriculture requires speedy development of agricultural science and technology, while study of the laws guiding agricultural production are also very important. These things cannot be cut off from each other.

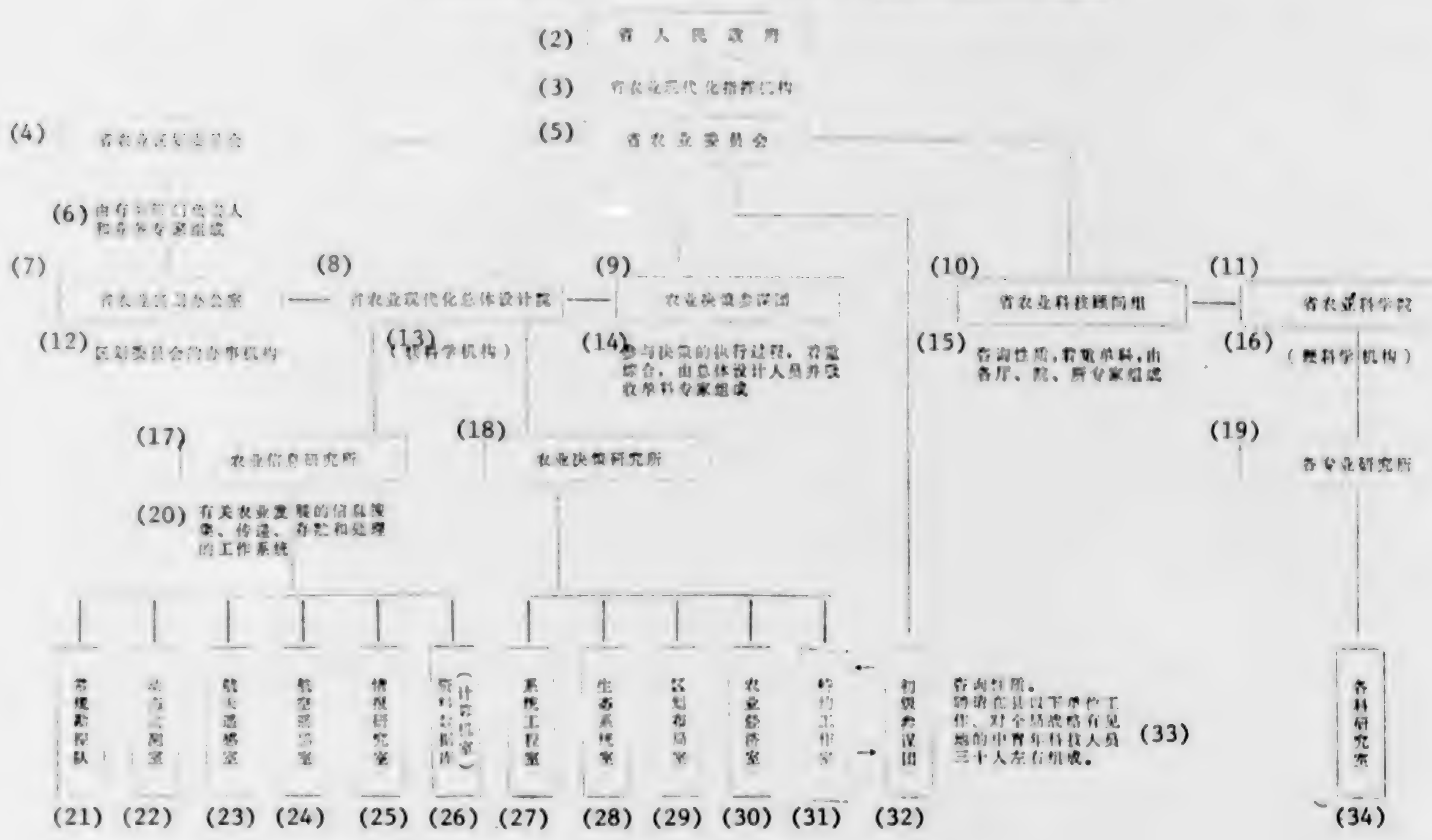
In the past agricultural sciences studied only "hardware"; consequently most courses in the agricultural sciences are "hard sciences." But agronomy introduces into the field of agriculture the concepts of systems structure order and the irreversibility of time. This is a requirement for the hastening of agricultural modernization and an inevitability in the development of science. It takes the study of agronomy from "hardware" into "software," and from "hard science" into "soft science." It draws the laws guiding agricultural production more closely into line with the laws of other social systems, and this should be regarded as a great step forward. The trend of scientific and technological development has issued us a challenge as to whether to adopt decisive measures for vigorous intensification and promotion of this research and putting it into practice that is also a test of our courage and insight.

Ours is a vast land with abundant resources in which natural and economic conditions vary greatly. In addition, the information transmission system was not very well perfected in the past, and the accuracy and reliability of news was poor. Consequently national and provincial agricultural zoning, planning and overall development schemes could not be completely in tune with national and provincial circumstances. The macrocontrol role in the guidance and control of the modernization of agriculture throughout the country and the province was limited. Therefore, I believe that we should concentrate substantially large forces to study and propagandize agricultural production's "guiding science," namely agronomy plus organization and management techniques and agricultural systems engineering, imparting these scientific techniques to decision-making leaders at all levels of prefectures, counties and communes where feedback is fairly sensitive, and news fairly accurate so as to provide them the theoretical weapons, methods and tools to make accurate decisions, and to rely on the intelligence and practical experience of the broad masses of grassroots decision makers to modernize China's agriculture.

In addition, departments at all levels concerned with the guidance of agricultural production must also set up overall staff organizations. Existing science and technology committees and advisory bodies are advisory units whose members are experts in various specialized fields and whose style of advising is to hold meetings, leaders issuing special invitations for several concentrated days of meetings at which everyone puts forward recommendations. Some also present written recommendations. But most of these recommendations are on individual tasks and do not depict overall plans. They can only provide leaders reference for routine tasks, but cannot break through the usual practices or influence leaders in a fundamental way to make more scientific decisions with regard to overall strategy. Establishment of an overall staff organization could change this state of affairs. It could organize experts in every field of the agricultural system, and could coordinate planning among experts in the fields of agricultural economics and administration and management for formulation of overall development strategies and plans for farming, forestry, animal husbandry, poultry raising, fisheries, insect industries, micro-organism industries, sideline industries, industrial enterprises and for water conservancy, energy, water and soil conservation, ecological environment, farm machines, farm electrification, communications and transportation and building of new rural villages. It would not be advisory in nature but rather would be a standing body that played an assisting role in formulating decisions, would directly participate in the carrying out of decisions, would help leaders absorb feedback and would regulate as required. In addition, the overall staff organization would also set up overall planning and decision making research bodies (see attached table). The experiments in application of remote sensing in agriculture begun in the province in 1980 have had preliminary success in weipian [5898 3651] information collection, visual interpretation and serial mapping, and have brought into being a fledgling specialized corps possessing remote sensing theory knowledge, which corps is now urgently in need of consolidation. It has also further developed applied experiments and has continued to nurture and improve the building of a specialized organization, thereby rapidly building a working system specifically devoted to collection, transmittal, storage and handling of information pertaining to development of agriculture and an agricultural information system that can serve agricultural decision making and study. It can place on scientific foundation the province's decision making and research for agricultural modernization. Existing agricultural zoning insititutes should look toward becoming involved in agricultural decision making, and in research and overall planning for the modernization of agriculture.

Additionally, we recommend that the National Commission on Agriculture and the Provincial Agriculture Commission engage middle-aged and young agricultural scientists and technicians engaged in grassroots work below the

(1) 〔图〕：省级农业现代化指挥、决策、参谋及研究机构设计图



Key:

1. (Attachment): Design Drawing for Provincial Agricultural Modernization Guidance, Decision Making, Staff and Research Body
2. Provincial People's Government
3. Provincial Agricultural Modernization Guidance Organization
4. Provincial Agricultural Zoning Commission
5. Provincial Agricultural Commission
6. Composed of persons in charge and experts in pertinent units
7. Provincial Agricultural Zoning Office
8. Provincial Overall Planning Academy for Agricultural Modernization
9. Staff Corps for Agricultural Decision Making
10. Provincial Agriculutral Science and Technology Advisory Group
11. Provincial Academy of Agriculutral Sciences
12. Working Body of Zoning Commission
13. Soft Sciences Body
14. Participates in process of carrying out decisions with emphasis on comprehensiveness. Composed of overall planning personnel and specialists in individual scientific fields that have been brought in.
15. Advisory in nature with emphasis on individual fields. Composed of specialists from all departments, academies and institutes.
16. Hard Sciences Body
17. Agricultural Information Institute
18. Agricultural Decision-Making Institute
19. Individual Specialized Institutes
20. Collection, transmittal, storage and handling of information pertinent to agricultural development
21. Routine Survey Team
22. Developments Monitoring Office
23. Space Remote-Sensing Office
24. Aerial Remote-Sensing Office
25. Intelligence Research Office
26. Data Bank (Computer Office)
27. Systems Engineering Office
28. Ecological Systems Office
29. Zoning Distribution Office
30. Agriculutral Economics Office
31. Special Projects Office
32. Elementary Staff Organization
33. Advisory in nature. Composed of about 30 middle-aged and young scientists and technicians with an overall strategic view hired from units below the county level.

prefecture and county levels to set up an "elementary braintrust" that is advisory in nature that meets regularly, conducts discussions or writes reports and treatises to provide advice on development strategy for agriculture throughout Shanxi province. Middle-aged and young scientists and technicians with roots at the grassroots level and with broad vision are pillars for a future policy-making staff organization for agriculture at all levels. They have been tempered by long experience at the grassroots, and they have explored problems of an overall nature, have respectable theoretical levels and have extraordinarily abundant practical experience. This is the reason they are a distinctively courageous and insightful fountain of knowledge. The way in which they see problems and express opinions is frequently right to the mark, and it is entirely reasonable to expect that they can put forward beneficial suggestions for modernization of the country's agriculture and provide for leaders in higher-level organizations fresh materials with a country flavor, with the vitality of nature and that have a quality of the new superseding the old.

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CSO: 4007/204

SICHUAN

PRODUCTION, MARKETING LIVE HOGS IN 1982 BREAK HISTORICAL RECORDS

Chengdu SICHUAN RIBAO in Chinese 27 Jan 82 p 1

[Text] During 1981, the year of extraordinarily disastrous floods, the Sichuan Province broke all historical records in the number of pigs in the inventory, the number of fat hogs, the number of hogs purchased by the state, and the average consumption per person in the province.

According to the information supplied by Sichuan Provincial Bureau of Statistics, all through 1981, the number of live pigs in the inventory of the province always stayed above 50 million head, with 32 million head ready for the market in addition to that number. The number, 19.3 million, purchased by the state was greater than that of 1980, which had been the highest level in history. With respect to consumption, 1981, in the cities, each person consumed on the average 56 jin 1 liang of pork, 9 liang less than 1980 but for the 80 million farmers, the average consumption of pork for 1981 was 22 jin 7 liang per person, up from that of 22 jin 1 liang of 1980. For all the cities and rural areas of the province, the average port consumption of 1981 was 26 jin 8 liang per person, an increase of 3 liang from that of the year before.

Under the condition of flood disasters, Sichuan Province broke four historical records in the production and sale of pigs mainly because the policy of storing food with the people was implemented. Ever since 1977, there have been continuous abundant harvests. The yield increase of grains was about 20 billion jin and most of these were kept in the rural villages. Last year, the grain in storage per capita exceeded 600 jin on the average. Sichuan's grain is abundant and pigs are plentiful, and pig production appears to have stabilized.

6248
CSO: 4007/236

SICHUAN

COMMUNE-BRIGADE RUN ENTERPRISE 1981 GROSS VALUE OF OUTPUT UP

Chengdu SICHUAN RIBAO in Chinese 27 Jan 82 p 1

[Text] In the process of implementing the policies of readjustment, consolidation and raising high standards, the commune-brigade run enterprises of Sichuan Province have developed very fast. According to statistics, the 1981 gross output value is 3.31 billion yuan, a growth of 10 percent over the year before and overfulfilling 1981 plan. Of the 1981 gross output value, commune run industrial value was 1.84 billion yuan, amounting to an increase of 12.3 percent over that of the previous year. The production of the 42 major industrial products also increased in greater numbers than that of the year before.

Last year, all the commune-brigade run enterprises of the province paid attention to improving the quality of their products. Quality competitions were held for the 7 major products of raw silk, machine-made paper, flower scented tea, "qu" wine, leather, leather shoes, and cement, and 96 producers of these won awards for excellence. These competitions promoted quality improvement of these products.

The development of commune-brigade run industries provided capital for agriculture and real benefits to production teams and their members. According to preliminary statistics, money paid back to the production teams in 1981 [for the workers they sent to the industries], wages paid to the commune members who engaged in industrial enterprise, and living allowance totaled 660 million yuan. The commune-brigade run industries made a profit of 315 million yuan. In all, the income of the collectives and individuals was increased by 980 million yuan. The taxes paid to the state's treasury reached more than 100 million yuan, nearly doubling that of the previous year.

To win the victory, commune-brigade run enterprises marched forward in spite of difficulties. With the broad support of those commune members and cadres engaged in industrial services and the leadership of party committees of various levels and related departments, the policies of readjustment were correctly understood and carried out. Those criticisms and blames raised in the beginning of the year did not discourage the commune-brigade run enterprises; they just struggled to overcome the temporary difficulties occurring in the course of readjustment. They fought against the extraordinary floods of July and August and won. They followed the policy of "reorganizing to improve and developing in steady steps" proposed by the provincial committee and conscientiously performed the work of reorganizing and improving the existing enterprises. The economic responsibility system of "fixed, guarantee and rewards" was popularized. They learned and popularized the experience of the joint enterprise of Fenghuang and Heihutan of Gonglai County. As a result, the number of enterprises jointly managed by production teams throughout the province has reached two thousand. With the economic development of rural merchandise, the commerce of the commune-brigade collectives was also somewhat improved. In 1981, there were 4,000 commune supply-sale departments, 1,200 more than the number of the year before. The total sales valued reached 250 million yuan, an increase of 1.5 fold over the previous year.

6743
CSO: 4007/236

BRIEFS

LIVESTOCK PROTECTION FUNDS--To effectively prevent and control natural disasters and promote the steady development of animal husbandry, Xinjiang Region has started to set up revolving funds for protecting livestock during natural disaster periods. With these funds, all pastoral areas can buy and store grass and fodder in normal times as preparation against natural disasters. The revolving funds for protecting livestock during natural disaster periods are different from the relief funds for protecting livestock during natural disaster periods. The relief funds will be appropriated when there is a natural disaster and will not be appropraited when there is no natural disaster. The revolving funds for protecting livestock during nautral disaster periods will be used to buy and store grass and fodder in such a way as rural areas store grain in preparation against famine. Regardless of whether there is a natural disaster or not, the revolving funds will be raised every year and will be spent on the purchase of grass and fodder. The relief funds are provided gratis but the revolving funds are not. The grass and fodder which are bought and stored with the revolving funds must be paid for at their normal prices and cannot be appropriated without payment. Over the last 2 years from 1980, financial departments in the region have raised revolving funds of 3 million yuan for pastoral areas as preparation against natural disasters. [HK030146 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 28 Mar 82]

STATE FARMS LAND RECLAMATION--In the past several years, the Xinjiang Agricultural and Land Reclamation System promoted, with emphasis, more than 20 advanced farming techniques and received obvious economic benefits. According to the estimate of the Science and Technology Division of the Agricultural and Land Reclamation Bureau, by extending the new breed of specially early maturing upland cotton, Xinluzao No 1, about 10 million yuan of added income has been obtained from the 2 years of 1980 and 1981 alone. The method of applying fertilizer once in layers for spring wheat was extended to 360,000 mu and the total yield increase of wheat was more than 26 million jin. By continuously improving the breed of fine-fur-sheep, the average wool production of the 350,000 head of fine-fur-sheep in Shihezi and Kuitun Land Reclamation Districts reached 5.26 kg [per head.] In recent years, more than 2,000 km of channels, with a plastic film seepage prevention device have been constructed at a low cost and the seepage prevention effect is satisfactory. [Text] [Beijing RENMIN RIBAO in Chinese 6 Feb 82 p 1]

CSO: 4007/363

'YUNNAN RIBAO' ON GRAIN, INDUSTRIAL CROP RATIO

HK080824 Kunming YUNNAN RIBAO in Chinese 20 Mar 82 pp 1, 2

[Contributing commentator's article: "Correctly Handle the Relationship Between Grain Production and Diversification"]

[Text] Correctly handling the relationship between grain production and diversified undertakings has an important bearing on accelerating well-coordinated development between them. On this question, it is worth summing up both positive and negative experiences. Actively promoting diversified undertakings without any relaxation of grain production is the principle for dealing with the question properly. Readjusting the agricultural structure is essential to ensuring well-coordinated development between grain production and diversification in line with local conditions. This is because a rational agricultural structure is a prerequisite for accelerated development of agriculture and also constitutes a major problem which we must endeavor to study and solve in the course of developing agriculture on a large scale.

Since the 3d plenary session of the 11th CCP Central Committee, especially over the past 2 years, the agricultural structure of our province has much improved through a steady readjustment and in some areas has gradually become rational. From 1979 to 1981, the acreage sown to grain crops in our province was reduced by a total of 6 million mu. Of this land some was divided among commune members as private plots or used for capital construction, but most was used as additional acreage to be sown to industrial crops. In 1981, the acreage sown to industrial crops increased to 4.37 million mu, which accounted for 7.1 percent of the total areas under cultivation, 1 percent higher than the 6.1 percent in 1980. However, this ratio is still lower than the national average acreage sown to industrial crops which stood at 10 percent in 1979. Furthermore, the areas growing industrial crops are distributed very unevenly in our province. In 1981, there were only 22 counties which used at least 10 percent of their cultivated land for growing industrial crops, and half of our province's counties used less than 5 percent of their farm land for this purpose. This percentage was even lower in border regions and mountain areas: in some of these places, only 1 percent of cultivated land was used for growing industrial crops. This shows that the single-crop economic structure remains unchanged in most areas of our province, and the natural and economic superiorities have not yet been brought into full play. Therefore, judging from a macroeconomic view, that is, from the view of coordinating the development of agriculture, afforestation, animal husbandry, agricultural sideline production and fishery, or from a microeconomic view, that is, from the view of crop distribution and proportion, there is still plenty of hope for readjusting the agricultural structure in our province. Particularly, in the areas where single-crop economic structure still plays a leading role, it is necessary to make big strides in expanding the acreage sown to industrial crops according to local conditions. Concretely speaking, the regions and counties which have about 20 percent of their farmland sown to cash crops should keep this percentage stable. The counties which use less than 5 percent of their land for this should take a big step forward, and the counties which have only 1-3 percent of the farmland growing cash crops should strive to gradually increase the level to over 5 percent. From the experiences gained in some regions, it is possible to manage to accomplish the above targets and there is no risk in doing so. However, in making concrete arrangements, we must adopt a prudent policy and keep a level head. With all-round considerations, we must pay attention to well-coordinated development and overall balance, avoiding subjectivism and lopsided development. We must uphold the principle of "actively promoting diversification without any relaxation in grain production" and uphold the principle of overall development of agriculture, afforestation, animal husbandry, agricultural sideline production and fishery. Through readjustment, we should tangibly turn natural advantages into economic ones so that commodity economy can be greatly promoted and the natural environment can be much improved. Thus, the state will benefit, the collective will be consolidated and commune members will become affluent.

Grain production is undoubtedly very important to our province. Though rapid development has been made in grain production over the past few years, we are still not self-sufficient and we still have need to bring in grain. Moreover, the level of per capita consumption and rationing in our province's rural areas is lower than the country's average level. Therefore, in stressing the development of diversification, we should by no means blindly promote production of more profitable commodity crops. This will affect the steady growth of grain production. It must be made clear that feeding the people in towns and cities remains the priority task in our province's economic construction and also is the basis for promoting diversification. Our province should strive to have grain enough to spare as quickly as possible. This is entirely necessary and it is possible to do so.

However, this certainly does not mean that we should put off quickening the pace of promoting diversification until grain production has reached a very high level. Practice has proved that so long as there is proper distribution of crop varieties, rational agricultural structure, correct policies, strong measures, good organization, and concrete methods, it is possible to quicken the pace of promoting diversification, without affecting grain production, and on the contrary, bringing about a great advance in grain production. In particular, this will give an impetus to accelerating scientific farming and raising per area unit yield. Of course, there are aspects of interaction between developing grain production and diversified undertakings, but most aspects are mutually beneficial in helping each other forward. The experiences gained in Yuxi County merit our attention. In 1981, 22 percent of farmland was sown to industrial crops in this county and economic income rose considerably. The total agricultural output value consisted of 70 percent grain production and 10 percent diversified crops. Each commune member received an average of over 200 yuan from the distribution of collective income. There were bumper agricultural harvests for successive 5 years. There were 80,000 mu of wheat field yielding 516 jin per mu and 130,000 mu of paddy field topping 1,000 jin per mu. The per capita food grain ration was 600 jin. Per capita grain delivered to the state exceeded 200 jin. There were numerous examples of similar individual communes, production brigades or production teams to be seen. Panxi Town in Huaning County has 6,000 mu of cultivated area. In 1981, the acreage sown to grain crops was reduced by 1,000 mu, compared with 1980. Of this, 600 mu of fields were sown to sugarcane, and 400 mu to vegetables. Subsequently, total output of grain increased by 750,000 jin and sugarcane output rose by 76.9 percent over the previous year. Total income increased by 43.1 percent and per capita annual income rose to 152 yuan. In the previous years, Panxi Town carried out triple-cropping of grain each year, including one crop of wheat and two crops of rice. Even with this, the combined per mu yield was still below 700 jin. In 1981, though only double-cropping was carried out, yield per mu topped 1,500 jin. In Zhaotong County there is a people's commune named Sazha, where per capita grain ration has risen to 500 jin per year, per capita annual income is 210 yuan and each household gets an average of 1,250 yuan every year. All this has been achieved due to the fact that the economic structure of single grain crop was changed, great efforts were made to grow fruit trees and other industrial crops, the acreage sown to grain crops were reduced to 56.3 percent of the sown area, and the acreage used for growing fruit trees and other industrial crops was increased to 43.7 percent. Meanwhile, in [illegible]shan County, two production brigades in Haibangao Village which are located in the freezing highland have achieved good economic results because they gave up the old traditional way of destroying forests and opening up wasteland to grow grain. They upheld the principle of undertaking afforestation and animal husbandry as the main jobs. The per capita income of the 159 households in these two production brigades is now over 200 yuan. Grain output has also successively increased since 1977. The masses said happily: "In the past we ruined forests and opened up wasteland to grow bitter buckwheat. If the first year we worked with enthusiasm, in the second year we had to double our efforts and in the third year all we did was in vain." All the aforesaid experiences apply to various specific conditions in such different places as high-yielding and low-yielding areas, flatlands, mountainous areas and freezing highlands. These experiences have broadened our minds, heightened our confidence and given us a bright future. There is a great disparity in these areas in their natural conditions, economy, technology and management. Therefore, while making arrangements for geographical distribution and proportion of varieties in growing grain and industrial crops, we must base our decisions on local conditions, and no rigid uniformity should be sought.

Readjusting agricultural structure and promoting diversification, does not mean we must reduce areas sown to grain. Especially in promoting timber trees and livestock breeding as well as in growing certain kinds of tropical fruits, we can make use of large amount of barren hilly land, avoiding any reduction of areas sown to grain. So far as a county is concerned, if it is necessary to use some of its grain land for other purpose, it should ensure an additional grain supply to meet the demands of population growth and make up that grain deficiency caused by the expansion of its acreage used for growing cash crops.

It should also guarantee the fulfillment of state purchase quotas, the supply of fodder for promoting livestock breeding and some necessary grain reserves against possible crop failures. Attaining the above means ensuring an increase of 3 to 5 percent in grain production. This is not an easy job, but it can be done if efforts are made. In order to correctly handle the relationship between grain production and diversification, Yuxi Prefecture adopted the following methods: 1. Ensured there was no decrease in grain production, 2. Made full use of land, 3. Tapped all potential, and 4. Broadened sources of income. This is a successful experience which merits being used as reference and being popularized.

At present, a practical problem is that we must handle well the relationship between grain and other crops such as tobacco. Oil-bearing crops and sugarcane, especially the relationship between grain and flue-cured tobacco. As we know, our province's tobacco is high quality and quite competitive in markets both at home and abroad. Therefore, the area sown to it will inevitably be expanded in a proper way this year as its proportion in the nation's total [illegible] of tobacco is not big. However, we should neither occupy fertile land, no[illegible]d we destroy forests for this purpose. These are the most important two points we should bear in mind. In developing the flue-cured tobacco of our province, stress should be laid on the principle of enhancing the quality and the yield, and increasing income. This will give full play to the advantages of high-quality "Yunnan cigarettes" and enhance their competitiveness in both internal and external markets. In the meantime, we must speed up the development of sugarcane. In 1981, there were 717,000 mu of sugarcane fields in our province. However, the total output of cane falls below the current processing capacity of sugar refineries. There must be an increase by one-third of cane output to make up the current gap with processing capacity. We consider the gap with processing capacity in the coming season for pressing sugarcane will be much bigger. Sugar is in short-supply in our country and also is a daily necessity in people's life. Developing sugarcane production can achieve good economic results. Therefore, the speed of developing sugarcane production must be coordinated with the processing capacity of sugar refineries. From 1982, we must every year increase the acreage planted to sugarcane, while striving to raise per area unit yield. In the coming few years, all the three levels of provincial, prefectural and county authorities must allot some funds to speed up the building of small water conservation projects in the major sugarcane producing areas for enhancing per area unit yield of grain and sugar cane. Thus, we can reap bumper harvests of both grain and sugarcane, and we should at least ensure no decrease in grain output.

CSO: 4007/163

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TITLE: "Estimation of Heterosis of Millet (Setariaitalica Beauv) on Complementation of Parental Homogenates"

SOURCE: Shanghai SHENGWU HUAXUE YU SHENGWU WULI XUEBAO [ACTA BIOCHEMICA ET BIOPHYSICA SINICA] in Chinese No 1, Feb 82 pp 77-79

ABSTRACT: At present, several years of field tests are required to select hybrid combinations of high heterosis. Using biochemical technique to predict heterosis is, therefore, an important subject in modern crop breeding. Based upon a previous report of obvious correlation between complementary oxidizing activity of parents and hybrid heterosis (YANG Fuyu [2799 4395 1938]: KEXUE TONGBAO No 23, 1978 p 752) in corn, the authors designed an experiment to test the technique in millet. Millet seeds are sprouted and the sprouts are cut from the seeds to measure 0.5-1.0 cm in length. They are left to stand for 30 minutes under a temperature of 0°C before they are mixed in a cane sugar medium at a ratio of 1 : 3 and mashed into a pulp to test the oxidizing activity. In case of high heterosis combination, the oxidizing activity of the mixture of the pulp of both parents is 123 percent of the average oxidizing activity of the pulp of one parent and that of the other. In case of weak heterosis, the oxidizing activity of the mixture is 81 - 106 percent of the average value of the 2 parents tested separately.

6648
CSO: 4011/5

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TITLE: "Experimental Research on the 2-2-3 Nuclear Sterile Wheat Controlled by a Single Dominant Gene"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 10 Feb 82 pp 8-12, 32

ABSTRACT: The research project on 10 materials of the 2-2-3 sterile line and its derivative lines officially began in 1974. The first period was devoted to backcrossing for the purpose of finding its sterile-free line and new sterile types. Then, a large quantity of common wheat breeds, T type restorer lines, hard-grain wheat, Indian dwarf wheat, octoploid triticale, and other newly created materials were used for test crossing. By the autumn of 1977, it became positively clear to the authors that 2-2-3 is a "pollenless type" wheat, with its sterility controlled by a single dominant gene. It is, therefore, difficult to coordinate it into 3

[continuation of SHANXI NONGYE KEXUE No 2, 1982 pp 8-12, 32]

lines. From that point on, the emphasis of the research project was switched to the utilization of 2-2-3 as a sterile mother for continuous backcrossing, for regular breeding, and for finding ways of utilizing it for rotated selection, etc. At present (1978-1981) this dominant sterility has been successfully transferred to some superior parents,and some new breed lines and T type restorer lines with above 80 percent restoring ability have been bred out. Experimental data of the research project from 1974 through 1981 are reported and analyzed.

AUTHOR: CHEN ZHU Xizhao [7115 2612 1585 2507]

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TITLE: "Cytomorphological Observation of the Anther and Pollen Development of Taigu Nuclear Sterile Wheat"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 82 pp 13-16, center fold

ABSTRACT: In 1979, in cooperation with the Physiological Genetics Research Office of the Institute of Crops, Chinese Academy of Agricultural Sciences, the Department of Biology of Beijing University conducted a preliminary cytomorphological observation of the anther and pollen development of Taigu sterile wheat. The results were partially reported previously (DENG Jingyang [6772 2529 2254] et al: ZUOWU XUEBAO Vol 6 No 1, 1980 pp 85-98.) The department officially carried on the project after Sep 80. Results of the past 2 years include the following: (1) As soon as the microspores are released, pollens of the sterile plant abort immediately. The anther is not observed to enlarge in volume and finally, there is nothing at all inside the anther. (2) The anther wall is abnormally developed. It appears that premature decomposition of the tapetum is perhaps the key to the degeneration of microspores. (3) Some abnormal phenomena are also expressed in the meiosis process of the pollen mother cell. Details of the observation are reported. Some photos are reproduced to form the center fold of this issue of the journal.

AUTHOR: None

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TITLE: "Several Key Problems of Technology Concerning Yield Increase of Cotton in Yuncheng Prefecture"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 82 pp 2-3

ABSTRACT: At present, the yield of the 2 million mu of cotton in Yuncheng Prefecture is neither high nor stable. An average yield of 50 jin/mu of ginned cotton occurs only in very few years. An analysis indicates that a small leaf-surface index, a short photosynthesis duration, weak photosynthesis, unreasonable transfer and distribution [of nutrients] are all reasons. In a word, there are not enough number of plants and the productivity of individual plants is low. This paper reports the results of a 3-year experiment and demonstration program carried out by the Institute of Crops to analyze the physiological and technical reasons of the low yield condition. It is the conclusion of the paper that the key technology includes the adoption of ground cover with plastic film, continuous improvement of soil fertility, timely control of diseases and pests, and careful trimming of plants.

CSO: 4011/57

AUTHOR: CHEN Yalu [7115 0068 4151]

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TITLE: "Principle of Growth and Development of Hybrid Rice and Its High Yield Cultivation Technique"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 1-3

ABSTRACT: From several years of experimental high yield cultivation of hybrid rice, the paper summarizes its growth and development principle as follows: (1) Early and fast tillering, generally beginning in 10-12 days after transplanting for the early season and about 7 days for the late season; (2) The number of leaves is generally stable under the condition of generally identifical transplanting time; (3) Under normal seeding and transplanting conditions, the duration from seedling transplant to evolvement of flower buds is generally stable; (4) The number of grains per spike decreases with the number of spikes per mu. Based upon the aforementioned facts, the paper discusses the following key measures in the high yield cultivation technique of hybrid rice: (1) The colony structure must be promoted or controlled to ensure harmonious development; (2) Reasonable application of fertilizer, especially organic, phosphorus, and potassium fertilizers; (3) Scientific management of water to reach the goal of neither deficient water nor deficient oxygen; (4) Effective control of major pests and diseases.

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TITLE: "A New Grouping of Early Maturing Hybrid Paddy Rice, Weiyou 33"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 3-4

ABSTRACT: The hybrid rice Weiyou-33 was bred out by the Research Institute of Rice and Wheat of Fujian Provincial Academy of Agricultural Sciences in 1978 by combining the Wei-20 sterile line and the early maturing restorer line 3533. Weiyou-33 was tested in small plots at the institute in 1979 and its expressions included strong tillering ability, large spikes and numerous grains (100-110 grains/spike, and [illegible]50-760 thousand effective spikes/mu.) It had a fruiting rate of 84.9 percent; the grain test weight was 27.2 g; and the entire growth and development period was 125 days in early season. In 1980, small acreage experimental cultivation in Guanquian Third Brigade produced 1112 jin/mu, 300 jin more than the Hong-410. The primary characteristics of the new hybrid and its cultivation technique are described.

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TITLE: "Preliminary Investigation of the Heterosis and the Combining Ability of T Type Hybrid Weat"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 5-8

ABSTRACT: In China, presently,in the work of studying the value of heterosis utilization of wheat and ways of application the following techniques are adopted: (1) The 3-line method of utilizing the T type and Non-T type sterile lines; (2) The 2-line method of using chemical detasseling technique to prepare hybrid seeds. In 1974, the institute launched the project of studying the technique of utilizing the T type sterile lines, partly in participation of the national research project. In 1980-81, on the basis of breeding the T type sterile line, selecting the restorer line, and combining the 3 lines, 16 hybrid groups were designed for preliminary analyses of their degree of heterosis expression and the combining ability of the parents. Of the 16 groups, observations of 3 years indicate that the yield of the hybrid averages a 7.04 percent increase over the average of the parents with the highest yield increase at 46.23 percent to confirm the general presence of heterosis in wheat. The restorer line Nar59 x Ruijiazan appears to be very promising.

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ORG: All of Special Class, Fuzhou University of Agriculture

TITLE: "Investigation Into The Reason for the Occurrence of Purple-stem Symptom in Paddy Rice"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 36-39

ABSTRACT: In the past few years, the phenomenon of "purple stems" has occurred in all rice producing regions of South China and a tendency of harmful effects has also been observed. With regard to the cause of this phenomenon, there are 4 schools of ideas: (1) Caused by certain mites; (2) By certain insects; (3) By a fungus; (4) By a physiological factor of the rice itself. In 1980, the authors, in the process of searching through a large quantity of purple-stem rice plants in the paddies near the university, found 2 species of mites, which are different from the Steneotarsonemus sp. or Schizotetranychus sp, currently being reported in other parts of the country. A scientist at the Chinese Academy of Sciences identified them as Tarsonemus sp, while another scientist of the Plant Protection Department of Nanjing College of Agriculture identified them to be Steneotarsonemus sp. Since Oct 80, the authors have conducted a periodical survey to determine the relationship between the existence and the number of these mites in designated paddies, and the conditions of temperature, humidity, and light exposure. This paper reports the results of these studies.

AUTHOR: KE Wentao [2688 2429 3447]
CHEN Renzhen [7115 0086 3791]

ORG: Both of Crop Cultivation Institute, Fujian Provincial Academy of Agricultural Sciences

TITLE: "Opinions Concerning the Production Arrangement of Single and Dual Season Rice in Northern Fujian"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 39-41

ABSTRACT: Some people are presently suggesting that in order to raise grain production dual season rice must replace the single season system. Others want to emphasize diversification and have proposed dual season rice cropping for paddies below 300 m in elevation and single season for those of 300-400m. The authors believe both suggestions are contrary to the principle of suitability for individual localities. Based upon the results of survey and experimentation in the mountainous areas of North Fujian, the authors discuss in the paper the problems involved in deciding dual or single season system on the basis of the altitude, on the basis of meteorological and labor conditions, on the basis of yield, on the basis of the severity of pest and disease, on the basis of the condition of water availability, on the basis of the local production and local economy. In conclusion, the authors recommend careful studies, experiments, and small area demonstrations before gradual extension of any cropping system.

AUTHOR: ALLAN, R. E.

ORG: None

TITLE: "Effect of Semi-dwarf Characteristic of Wheat and the Genetic Background on Seedling Formation"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 10 Feb 82 pp 44-47

ABSTRACT: This paper is a translation by PO Shi [3789 4258] of an article by the author, originally appearing in CROP SCIENCE Vol 20 No 5, 1980 pp 634-638. There were some minor omissions in the translated version.

6248
CSO: 4011/66

AUTHOR: ZHOU Mingzhen [0719 7686 6927]

ORG: Zhejiang Academy of Agricultural Science

TITLE: "A Special Fertilizer for Paddy Rice - Zinc Fertilizer"

SOURCE: Beijing NONGCUN KEXUE [RURAL SCIENCE] in Chinese No 2, 1982 pp 4-5

ABSTRACT: Research in India was the first to prove in 1966 that the white stunt disease of rice is completely different from diseases induced by pathogenetic microbes because it is induced by zinc deficiency of the soil. At present, large areas of zinc deficient soils have been discovered in China in Hubei, Jiangsu, Jiangxi, and Hebei and survey studies of the subject are being conducted in the other provinces. Reasons for paddy soils to be frequently deficient in zinc and methods of diagnosing this defect are explained. The four most commonly used methods of applying zinc fertilizer are: (1) Applying 10-20 jin/mu of zinc sulfate before transplanting; (2) Dip the root of seedlings in 1-4 percent zinc oxide liquid suspension during transplanting; (3) Spraying 0.1 percent water solution of zinc sulfate on leaf-surface 2 weeks after transplanting; (4) Soak seeds in zinc sulfate solution. According to the isotope tracing study conducted in Hubei Province, one application of zinc fertilizer is sufficient for 3 crops of rice; therefore, application of zinc fertilizer is needed only once every 1-2 years.

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TITLE: "New Advancement in Root Region Drug Application"

SOURCE: Beijing NONGCUN KEXUE [RURAL SCIENCE] in Chinese No 2, 1982 p 5

ABSTRACT: Internal absorbing insecticides may be applied in the region of root system activity to be absorbed and transferred to the stem, leaves, etc. so as to avoid spraying the drugs on the leaf-surface to be lost through evaporation, dripping, and photo-decomposition. Moreover, while the period of effectiveness of the drug may be lengthened, the problem of environmental pollution, drug residue, and damage to natural enemy of pests may be lessened. At first, a deep applicator is used to inject solid or liquid insecticides in the 6 cm layer of soil. This is a labor consuming operation and is difficult for the masses to accept. Methods of mixing insecticide with soil to be scattered during intermediate cultivation time or applying it in the soil during transplanting time have been successfully experimented. With these methods, 70-100 g of pure drug, including dimethoate, dimethoate oxide, carbofuran, etc. is sufficient when it is applied in this manner.

6248
CSO: 4011/60

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ORG: Jiangxi Provincial Bureau of Agricultural Machinery Management

TITLE: "Investigations Into Forms of Agricultural Machinery Management in Regions of Double Guarantees"

SOURCE: Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese No 2, 1982 pp 12-13

ABSTRACT: It is the opinion of the author that in order to gain the highest economic benefit, agricultural machinery should be operated as a specialized business. Each small producing unit and producer may purchase some necessary and small mechanized tools, but it is just not economical for them to own and operate large machines. Even in Japan, farmers are voluntarily getting together to purchase various machines to be used jointly. In China, the machines are properties of the collectives. Today, many hand-held tractors are sold to individuals for 30-40 percent of their original cost. In some areas, complete sets of machines valued at 3 to 4 thousand are being sold for 400 yuan. The author also points out that the realization of agricultural mechanization depends primarily on the strength of the collective economy. Under China's current condition, there is no way to build a modernized agriculture on the economic foundation of small family farms. Some have said that as the work and the production quota are contracted to and guaranteed by individual commune members, the granaries, the work yards, etc. have all been distributed to the members, and there is no one left at the production brigade to

[continuation of NONGYE JIXIE No 2, 1982 pp 12-13]

manage anything. In reality, the production brigade no longer exists; therefore, there is nothing to do but to sell the tractors, etc. The author believes that this is not a normal situation and this way of thinking is wrong. This type of problem should be repeatedly discussed and the masses should be educated to correct this type of situation. Some have said that many families are taking good care of the machines they have purchased because the efficiency of the machines affects their personal interest. Unlike the management of the collective body of the past, these machines are now well maintained. The author believes that in the past there was no system of responsibility in the use and management of agricultural machinery. The fault was with the prolonged neglect of some leaders and not with the principle of collective management. The author, therefore, maintains that only when the production brigade absolutely does not have the ability to manage the machines which are rapidly deteriorating can they be allowed to be sold in order to prevent them from becoming useless. Otherwise, the principle of collective management and collective ownership should be preserved.

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